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UniSourceEnergy SERVICES

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December 28, 2010

Arizona Corporation Commission DOCKETED

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Docket Control Arizona Corporation Commission 1200 W. Washington Phoenix, Arizona 85007

Re: UNS Electric, Inc. School Facilities Efficiency Program

Docket No. E-04204A-07-0365

Pursuant to Decision No. 71914, UNS Electric, Inc. ("UNS Electric") was required to file a school-specific program for energy efficiency in the DSM docket within three months from the date of this Decision. Please find attached UNS Electric's School Facilities Efficiency Program ("Program"). UNS Electric will be filing for approval of this Program in its Electric Energy Efficiency Implementation Plan in compliance with A.A.C. R14-2-2405.A.

If you have any questions, please contact me at (520) 884-3664.

Sincerely,

Melody Gilkey

cc: Co

Compliance, ACC

UNS Electric, Inc.

School Facilities Efficiency Program

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UNSE School Facilities Program

Program Description

The UNS Electric, Inc. ("UNSE") School Facilities Program ("Program") is open to participation by all existing school facilities in the UNSE service territory, including charter schools. The proposed Program will utilize the same delivery method and pay incentives for the same demand side management ("DSM") measures as the existing UNSE Commercial Facilities Efficiency Program, but with a separate budget reserved for schools. Incentives for the Program will also be paid at a higher level than for the Efficiency Program.

- The Program will offer incentives for a select group of retrofit and replace-on-burnout ("ROB") energy efficiency measures in existing school facilities. The efficiency measures offered include high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures.
- The direct install component will utilize an on-line proposal generation and project tracking application to reduce the transaction costs. Proposed incentives for DSM measures are identical to the incentive structure in the UNSE Commercial Facilities Efficiency Program; however UNSE proposes to pay up to 100% of incremental costs for schools. The Program will have a separate incentive budget of \$72,248 per year which is reserved exclusively for school use. If schools oversubscribe the budget, they will be allowed to request participation in the UNSE Commercial Facilities Efficiency Program which only pays up to 85% of incremental cost.

Program Objectives and Rationale

The primary goal of the Program is to encourage schools in UNSE's service territory to install energy efficiency measures in existing facilities. More specifically, the Program is designed to:

- Encourage schools to install high-efficiency lighting equipment and controls, HVAC equipment, and
 energy-efficient refrigeration system retrofits in their facilities (see Error! Reference source not
 found., School Facilities Efficiency Incentive Summary, for the schedule of measures and
 incentives).
- Encourage contractors to promote the Program and provide turn-key installation services to schools.
- Assure that the participation process is clear, easy to understand and simple.
- Increase the awareness and knowledge of school facility managers and other decision-makers on the benefits of high-efficiency equipment and systems.

Since 2008, participation by schools in the UNSE Commercial Facilities Efficiency Program has been modest. In order to increase participation in energy efficiency retro-fits by schools, UNSE has developed this Program, which proposes to fund up to 100% of installed costs while engaging the contractor community to provide turn-key services. This is a 15% increase from the 85% allowed in the UNSE Commercial Facilities Program. The Schools Program will follow the design of the UNSE Commercial Facilities Efficiency Program because the direct-install concept has a proven track record of high participation and cost-effective life cycle savings for hard-to-reach markets, including schools.

Target Market

The target market for this Program is all kindergarten through twelfth grade ("K-12") public schools, including charter schools, in the UNSE service territory.

Program Eligibility

Customers must receive electric service from UNSE to be eligible for participation. For the purposes of this Program, school is defined as a "school entity." In the case of traditional public schools, a school entity is a public school district. In the case of a charter school, a school entity is one that has a state charter.

Current Baseline Conditions

Schools represent a market segment that has historically been underserved. This Program has been designed explicitly to increase the participation of schools in the UNSE DSM programs. Incentive levels and Program structure have been customized to address and overcome market barriers.

Products and Services Provided

The Program has an upstream market incentive design that provides incentives directly to installing contractors for the installation of energy efficiency measures. More specifically, the Program offers the following products and services:

- Educational and promotional pieces designed to assist contractors with marketing the Program to schools; and
- Education and promotional efforts for schools and contractor allies on how the Program functions, what energy efficiency technologies are offered, what incentives are provided and the benefits of the measures.

The lighting measures to be included in the Program are:

- T8 retrofits retrofit of T12 fluorescent lighting with T8 lighting.
- Screw-in compact fluorescent light ("CFL") retrofits replacement of incandescent lamps with screw-in fluorescent lamps.
- Exit sign retrofits retrofit of incandescent and CFL exit signs with LED or electroluminescent exit signs lighting.
- Occupancy sensors installation of occupancy sensor controls on lighting systems.
- De-lamping de-lamping of lower efficiency fluorescent lighting fixtures or overlit areas.
- Reduced lighting power density ("LPD") bringing lighting levels down to appropriate levels.
- High intensity discharge ("HID") lamps to T8 or T5.

• Standard T8 to premium T8

The HVAC measures to be included in the Program are:

- High-efficiency AC/HP installation of high-efficiency packaged air conditioners and heat pumps.
- Programmable thermostats replacement of standard thermostats with programmable set-back thermostats.
- Shade screens and window films to reduce solar insolation.

The Program will also utilize variable speed drive motors to optimize performance, vending miser sensors, which turn off or turn down refrigeration and lighting on vending machines when not in use, and smart strips to better control plug loads. Whole Building custom incentive applications will also be considered where appropriate. Additionally, see Table 1 for a summary of the incentives offered for each of the Program measures.

Table 1. School Facilities Efficiency Incentive Summary

LIGHTING MEASURES	COST PER FIXTURE
Replace T12 Systems & Magnetic Ballasts w/ T8 Systems & Electronic Ballasts	\$55/fixture
Energy Efficient Integral Compact Fluorescent Lighting	\$11/lamp
Replace Incandescent and CFL Exit Signs	\$55/sign
Install Occupancy Sensors on Lighting Fixtures	\$96/sensor
Daylighting controls	\$751/kW base load
Hard Wire CFL	\$15/bulb
HIDs to T8/T5	\$96/fixture
Induction Lighting	\$196/lamp
Outdoor CFL	\$9/lamp
Reduced LPD	\$4,472/customer
Screw in cold cathode CFL	\$12/bulb
T8 to T8	\$21/lamp
Delamping	\$6/fixture
HVAC MEASURES	
Programmable Thermostats	\$204/thermostat
High-Efficiency Packaged AC and Heat Pumps (<65,000 Btuh)	\$440 to \$1,321 (depending on size and SEER rating)
Shade Screens	\$4/sq. ft.
Window Films	\$3/sq. ft.
MOTORS	Appendix and the second
Variable speed drives	\$377/HP
PLUG LOADS	10 mm
Beverage Controls ("Vending Miser")	\$199/sensor
Snack Controls ("Vending Miser")	\$103/sensor
Advanced Power Strips - Load Sensor	\$32/strip
Advanced Power Strips - Occupancy Sensors	\$90/strip
Advanced Power Strips - Timer Plug Strip	\$19/strip
WHOLE BUILDING	a 2 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Custom measures	\$6,535/customer

Program Delivery Strategy, Incentive Processing, and Administration

The Program is an upstream market incentive program that will utilize contractors to provide turn-key installation services to schools. The Program will be implemented by employing the same implementation contractor that delivers the UNSE Commercial Facilities Efficiency Program. Incentives will be paid directly to contractors and are designed to offset up to 100% of project installation costs. The participation process will be facilitated by an internet-based system that will provide an analysis of project savings, cost and cost savings and automated proposal preparation.

UNSE will assign an in-house program manager to oversee the Program, provide guidance on program activities that is consistent with UNSE's goals and customer service requirements, and provide a contact point for schools that are interested in or have concerns about the Program. The implementation contractor will be responsible for program administration, application and incentive processing, monitoring the activities of the installing contractors, participation tracking and reporting, and overall quality control and management of the delivery process. As part of the implementation plan, the implementation contractor will conduct outreach to contractors, marketing and promotion to schools, and education and training on the benefits and functioning of the program.

The installing contractors will promote the program directly to schools, provide turn-key installation services and have access to the internet processing system to prepare proposals.

Program Marketing and Communications Strategy

The marketing and communications strategy will be designed to inform schools of the availability and benefits of the Program and how they can participate. The strategy will include specific outreach to schools and to contractors who typically do retrofits in schools. An important part of the marketing plan will be content and functionality on the UNSE website, which will direct schools to information about the Program. More specifically, the marketing and communications plan will include:

- Direct outreach to schools within the UNSE service territory;
- Direct outreach to existing trade allies that specifically target schools for the Program;
- Website content at uesaz.com providing Program information resources, contact information, and links to other relevant service and information resources:
- Customer care representatives will be available to answer any questions regarding the Program;
- Presentations by the Program Manager and Implementation Contractor specifically targeted to schools.

Program Implementation Schedule

The Program will be implemented immediately upon Arizona Corporation Commission approval.

Measurement, Evaluation, and Research

UNSE will adopt a strategy that calls for integrated data collection that is designed to provide a quality data resource for program tracking, management and evaluation. This approach will entail the following primary activities:

- **Database management** As part of program operation, UNSE will collect the necessary data elements to populate the tracking database and provide periodic reporting.
- Integrated implementation data collection UNSE will work with the Implementation Contractor to establish systems to collect the data needed to support effective program management and evaluation through the implementation and customer application processes. The database tracking system will be integrated with implementation data collection processes.
- **Field verification** UNSE will conduct field verification of the installation of a sample of measures throughout the implementation of the Program.
- Tracking of savings using deemed savings values UNSE will develop deemed savings values for each measure and technology promoted by the Program and periodically review and revise the savings values to be consistent with program participation and accurately estimated the savings being achieved by the Program.

This approach will provide UNSE with ongoing feedback on program progress and enable program management to adjust or correct the program so as to be more effective, provide a higher level of service, and be more cost beneficial. Integrated data collection will also provide a high quality data resource for evaluation activities.

Quality Assurance and Control

Training on program rules and installation guidelines will be provided to interested contractors. Contractors will be made aware that their work may be inspected pre or post installation and that customer feedback on their performance will be solicited. The implementation contractor will randomly inspect at least 10% of all jobs to verify fixture counts, hours of use and functionality of the installed equipment.

Program Costs and Benefits

The annual budgets for 2011 and 2012 will be allocated as shown in Table 2. The 2011 budget as shown includes additional staff time required for new program start up. Any portion of the budget that is not expensed or reserved by the end of October may be transferred to the regular UNSE Commercial Facilities Efficiency Program.

Table 2. 2011 to 2012 Program Budget

Year	2011	2012
Total Budget	\$162,513	\$200,042
Incentives	\$72,248	\$156,411
Administrative Costs	\$17,000	\$3,003
Incentives as % of Budget	44%	78%

Total annual demand and energy savings goals are presented in Table 3. In addition to the savings shown in Table 3, it is estimated that the Program will produce the additional environmental benefits from 2011-2012, as shown in Table 4.

Table 3. Projected Capacity and Energy Benefits

Annual Incremental Savings	2011	2012
Coincident peak (MW)	0.05	0.12
Energy Savings (MWh)	596	1,291

Table 4. Projected Lifetime Environmental Benefits

Environmental Benefits	2011	2012
SOx (metric tons)	0.01	0.03
NOx (metric tons)	0.39	0.84
CO ₂ (metric tons)	2,810	6,085

Table 5 provides program level benefit/cost analysis results. Measure level benefit-cost results assess cost-effectiveness on the basis of incremental costs only, while program level benefit-cost results assess both incremental costs and total program delivery costs. Measure level benefit-cost results are detailed in Appendix B.

Table 5. Benefit-Cost Analysis Results

Societal Cost Test BC Ratio	2011	2012
Total Program	2.5	4.4

Appendix A: 2011 - 2012 Budget detail:

UNSE Schools Program (2011)				
Measure	New or Existing Measure for 2011	Maximum Incentive / Measure	Units	TOTAL
Custom Measures	New	\$6,535	6	\$39,209
14 SEER Packaged and Split Air Conditioners	New	\$440		\$0
14 SEER Packaged and Split Heat Pumps	New	\$440		\$0
15 SEER Packaged and Split Air Conditioners	New	\$880		\$0
15 SEER Packaged and Split Heat Pumps	New	\$880		\$0
16 SEER Packaged and Split Air Conditioners	New	\$1,321		\$0
16 SEER Packaged and Split Heat Pumps	New	\$1,321		\$0
Programmable Thermostats	New	\$204	30	\$6,133
Shade Screens	New	\$4		\$0
Window Films	New	\$3		\$0
Daylighting controls	New	\$751		\$0
Delamping	New	\$6	90	\$572
Energy efficient exit signs	New	\$55	75	\$4,133
Hard Wire CFL	New	\$15	60	\$902
HIDs to T8/T5	New	\$96	45	\$4,320
Induction Lighting	New	\$196		\$0
Integral Screw In CFL	New	\$11		\$0
LED Channel Signs	New	\$13		\$0
Occupancy sensors	New	\$96	12	\$1,152
Outdoor CFL	New	\$9	20	\$172
Reduced LPD	New	\$4,472		\$0
Screw in cold cathode CFL	New	\$12		\$0
T 8 Lighting	New	\$55	200	\$10,966
T8 to T8	New	\$21		\$0
Variable Speed Drives	New	\$377		\$0
Beverage Controls ("Vending Miser")	New	\$199	15	\$2,985
Snack Controls ("Vending Miser")	New	\$103	15	\$1,545
Advanced Power Strips - Load Sensor	New	\$32	5	\$160
Advanced Power Strips - Occupancy Sensors	New	\$90		\$0
Advanced Power Strips - Timer Plug Strip	New	\$19		\$0
Occupancy Sensor Vending Machine and Reach-in Cooler Controls	New	\$199		\$0
Subtotal Financial Incentives				\$72,248
Program Delivery	444	150		
Utility Program Delivery				\$45,000
IC Program Delivery				\$13,014
Other Direct Costs (Office, Travel, Training Expenses)				\$1,991

Subtotal Program Delivery			\$60,005
Program Marketing			
Program Marketing			\$7,009
Subtotal Program Marketing		100	\$7,009
Utility Program Administration			
Utility Program Administration			\$17,000
Subtotal Utility Program Administration			\$17,000
Evaluation		1-10	
Measurement, Evaluation and Research			\$6,250
Subtotal Evaluation			\$6,250
Total Incentive			\$72,248
Total Non-Incentive	2 mg		\$90,265
TOTAL	12		\$162,513
			-
Incentives as % of Total Budget			44%

UNSE C&I Schools Program (2012)				
Measure	New or Existing Measure for 2011	Maximum Incentive / Measure	Units	TOTAL
Custom Measures	New	\$6,535	13	\$84,952
14 SEER Packaged and Split Air Conditioners	New	\$440		\$0
14 SEER Packaged and Split Heat Pumps	New	\$440		\$0
15 SEER Packaged and Split Air Conditioners	New	\$880		\$0
15 SEER Packaged and Split Heat Pumps	New	\$880		\$0
16 SEER Packaged and Split Air Conditioners	New	\$1,321		\$0
16 SEER Packaged and Split Heat Pumps	New	\$1,321		\$0
Programmable Thermostats	New	\$204	65	\$13,289
Shade Screens	New	\$4		\$0
Window Films	New	\$3		\$0
Daylighting controls	New	\$751		\$0
Delamping	New	\$6	194	\$1,234
Energy efficient exit signs	New	\$55	162	\$8,926
Hard Wire CFL	New	\$15	129	\$1,939
HIDs to T8/T5	New	\$96	97	\$9,312
Induction Lighting	New	\$196		\$0
Integral Screw In CFL	New	\$11		\$0
Occupancy sensors	New	\$96	26	\$2,496
Outdoor CFL	New	\$9	43	\$369

Reduced LPD	New	\$4,472		\$0
Screw in cold cathode CFL	New	\$12		\$0
T 8 Lighting	New	\$55	430	\$23,577
T8 to T8	New	\$21		\$0
Variable Speed Drives	New	\$377		\$0
Beverage Controls ("vending miser")	New	\$199	33	\$6,567
Snack Controls ("Vending Miser")	New	\$103	33	\$3,399
Advanced Power Strips - Load Sensor	New	\$32	11	\$352
Advanced Power Strips - Occupancy Sensors	New	\$90		\$0
Advanced Power Strips - Timer Plug Strip	New	\$19		\$0
Subtotal Financial Incentives				\$156,411
Program Delivery				
Utility Program Delivery				\$7,949
IC Program Delivery				\$13,404
Other Direct Costs (office, travel, and training expenses)				\$2,051
Subtotal Program Delivery		100		\$23,404
Program Marketing				
Program Marketing				\$9,530
Subtotal Program Marketing				\$9,530
Utility Program Administration		1000		
Utility Program Administration				\$3,003
Subtotal Utility Program Administration	and the same			\$3,003
Evaluation				
Measurement, Evaluation and Research				\$7,694
Subtotal Evaluation	100			\$7,694
Total Incentive				\$156,411
Total Non-Incentive				\$43,631
TOTAL	33492			\$200,042
Incentives as % of Total Budget				78%

Appendix B: Measure Analysis Sheets

UNSE Schools Program measures:

Custom Measures
14 SEER Packaged and Split Air Conditioners
14 SEER Packaged and Split Heat Pumps
15 SEER Packaged and Split Air Conditioners
15 SEER Packaged and Split Heat Pumps
16 SEER Packaged and Split Air Conditioners
16 SEER Packaged and Split Heat Pumps
Programmable Thermostats
Shade Screens
Window Films
Daylighting controls
Delamping
Energy efficient exit signs
Hard Wire CFL
HIDs to T8/T5
Induction Lighting
Integral Screw In CFL
Occupancy sensors
Outdoor CFL
Reduced LPD
Screw in cold cathode CFL
T 8 Lighting
T8 to T8
Variable Speed Drives
Beverage Controls ("Vending Miser")
Snack Controls ("Vending Miser")
Advanced Power Strips - Load Sensor
Advanced Power Strips - Occupancy Sensors
Advanced Power Strips - Timer Plug Strip

hcentive Calculations Qustom Measures

Schools - Custom Measures

PROGRAM DATA		RATEDATA		OPERATING DATA**		OTHER FACTORS		
Measure Life (vrs)**:	10	Res Ave		Op Hours:	8,760	Line Loss Energy Factor:	8:5%	
Program Life (vrs):	2	S/RW:	0.00	Summer Ratio:	20%	Line Loss Demand Factor:	9.5%	
Demand AC (\$/kW):	64.51	\$/kWh, On-Peak:	0.11	Winter Ratio:	20%	Capacity Reserve Factor:	0.0%	
Summer On-pk Energy AC (\$/kWh):	0.08	\$/kWh, Off-Peak:	0.11	Coincidence Factor:	80%	Application	Æ	
Summer Off-pk Energy AC (\$/kWh):	90.0					Cost Basis:	Full Installed	
Winter On-pk Energy AC (\$/kWh):	0.07							
Winter Off-pk Energy AC (\$/kWh):	90.0							
Program Administrative Costs (\$/unit):	0							
IRP Discount Rate:	9.02%							
Social Discount Rate	4.00%							
NTG Ratio:	100%							
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BC Ratio 3.3 3.3

Schools Program - New HVAC

Incertive Calculations

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13 SEER Baseline

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AirConditioner	, r		•				0.052	500	2 80	27.0	657	766	162%	927			10.4	0.0	2%	100%	0.85
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	4						0.103	398	929								7.5	0.0	25%	100%	1.19
	2						0.129	498	795				ı		_		6.5	0.0	35%	100%	1.37
Weighted Average	verage				٥	0.117	0.104	404	040	760	1,050	880 11	119% 8	880 -120	088	118	7.7	0.0	100%	100%	1.19
Packaged and Soft	0	16	11.8	13	11.0	0.148	132	280	447	270				1.093 -52			13.2	0.0	%	100%	0,72
AirConditioners	2.5	•					0.165	350	559	713	985	1.149 16	161% 1.1	1.149 -436	1.149	103	11.1	0.0	2%	100%	0.86
16 SEER	м						0.198	420	1/9								6.7	0.0	15%	4001	0.98
	3.5						0.231	490			1,378 1,				1,262		8.7	0.0	20%	100%	90:
	4						0.264	260	_					,		3 165	8.0	0.0	25%	% !	170
5 Weighted Average	2 Verage	16	11.8	13	0 0	0.370	0.330	8 29	7,118	1,426 1	1,969	1,430 10	100%	1,450 -5	1,450		8.2	0.0	35%	300,	1.20
									\vdash												
Packaged and Split	7		·				0.132	351	261	694	958 1,	1,457 21	2,10% 1,4	1,457 -763	1,457	7 104	14.1	0.0	%6	4001	99.0
Air Conditioners	2.5						0.165										11.8	0.0	2%	100%	0.78
17 SEER	M L						0.198						154% 1,6		1,607		10.3	0 0	15%	80,000	5 6
	c. 4		21.8	. K	110	0.259	0.231	502	1123	1 287	, 0/0,	51 280,1		1,002 -400		207	9 60	9 9	25%	8 8	8 8
	Ŋ						0.330										7.4	0.0	25%	100%	1.26
Weighted Average	verage				Ö	0.298	0.265		H			1,761 13	130% 1,7	1,761 -365	1,761		8.7	0.0	100%	4001	1.09
tin 3 bar baseyard	c	,	0	,		202.0	222	776	200	900	-	7001	70Z0C	7.00 L		122	077	Ċ	8	100%	8
AirConditioners	2.5						0.342	518	828		1.547						12.5	0.0	2%	801 801	0.81
18 SEER	м						0.410			1,345							11.0	0.0	15%	4001	0.92
	3.5					0.537 (0.478										8.6	0.0	20%	- %001	1.03
	4	18	œ	13 1,					1,326			2,196 12	125% 2,1			5 244	9.0	0.0	25%	,00t	1.13
	ß		12.8		11.0 0.		0.684		+	2,241 3			1	2,384 -143	2,384		7.8	0.0	35%	100%	1.30
Weighted Average	werage				٥	0.617	0.550	835	\dashv		2,491 2,				┥		9.5	0.0	100%	400%	1.13
*EE EER value based on Efficient Home cooling MER Report 2010 *Incertives based on UES 2011 Proceamplanning	Efficient H	ome Coolin, xaramPlanr	og IMER Re	epart 201	0																
***Weighting Factors based on engineering assumptions	donengir	reering assu	umptions.																		

EE EER value based on Efficient Home Cooling MeR Report 2010 "Incentives based on UES 2011 Program Planning. ***Weignting Factor based on engineering assumptions.

Incertive Calculations
Nork es Split and Packaged HP SEER-rated
13 SEER Baseline

Schools - New HVAC

9.5% 9.5% 0.0% ROB, NEW ncrements %Incent Societal 1,27 1,51 1,73 1,93 2,11 2,43 1.38 1.64 1.88 1.88 2.29 2.29 2.54 2.30 1.12 1.53 1.70 1.86 2.14 1.02 1.28 1.54 1.69 1.94 1,20 1,28 1,58 1,58 1,95 1,95 1.87 %001 100% %001 00% 100% 100% 100% 100% 100% 100% 00% 100% 100% 100% 100% 100% 100% 100% 80 Line Loss Demand Factor: Line Loss Energy Factor: Capacity Reserve Factor: Applicator: Weighting Factor*** WGT. 0% 15% 20% 25% 35% 0% 5% 20% 25% 25% 0% 5% 15% 20% 25% 35% Payback inc. w/inc. CUSTOMER COST/SAVINGS 8 8 8 8 8 8 wo'inc. 8.8 7.4 6.4 6.4 5.8 5.3 5.4 5.4 7.4 6.3 5.5 7.9 7.9 7.9 7.9 7.9 8.0 6.7 5.9 5.3 4.8 4.9 8.5 7.1 6.2 6.2 5.6 5.4 4.5 6.2 7.5 7.9 8.9 8.9 Cost Savings Perunit (\$) 137 171 205 240 274 274 172 215 215 258 301 346 346 49 86 123 99 99 98 123 147 172 196 196 197 incr. Cost Per Unit 1,093 1,149 1,262 1,318 1,430 1,457 1,532 1,607 1,682 1,757 1,907 1,821 1,915 2,009 2,103 2,196 2,284 2,201 364 402 421 477 440 728 766 803 879 879 880 880 204 39 127 127 293 459 467 282 195 195 288 288 288 288 288 487 247 -7 -7 232 472 484 ₹ © 0 72 145 217 289 289 434 293 75-73-72-463-470-470-809 1292 554 885 54% 46% 0.89 PV Cast Perunit 1,093 1,149 1,205 1,318 1,318 1,320 1,321 1,457 1,532 1,607 1,682 1,757 1,907 1,821 1,915 2,009 2,103 2,196 2,284 2,284 364 402 421 427 440 440 728 766 803 879 879 880 880 880 INCENTIVE CALCULATIONS Recommended Incentive (Per Unit) *** 123% 103% 90% 81% 74% 64% 136% 114% 100% 90% 82% 71% 136% 115% 100% 90% 82% 71% 0.8 91% 80% 72% 65% 65% 67% 84% 74% 66% 60% 52% 62% 1,093 1,149 1,262 1,318 1,318 1,326 1,327 1,457 1,532 1,607 1,757 1,757 1,761 1,821 1,915 2,009 2,103 2,196 2,284 2,201 364 383 402 421 477 440 440 coincidence Factor: Equipment pk Inrload factor: OPERATING DATA
ONPK EFLH Coding:
OffPK EFLH Coding:
ONPK EFLH Heating:
OffPK EFLH Heating:
SurmerRatio PV Benefit 1,842 2,303 2,764 3,224 3,685 4,606 3,708 Social 503 629 754 754 880 1,006 1,257 926 1,158 1,390 1,621 1,853 2,316 2,316 1,227 1,533 1,840 2,146 2,453 2,453 2,468 1,482 1,852 2,222 2,593 2,963 5,704 WinterRatio IRP PV Benefit 671 839 1,006 1,174 1,342 1,677 1,677 888 1,110 1,532 1,554 1,776 2,220 1,073 1,341 1,609 1,877 2,146 2,682 1,334 1,668 2,001 2,335 2,668 3,335 2,685 364 455 546 637 728 728 733 Off-pk Savings Per Unit 532 665 798 930 1,063 1,329 742 928 1,113 1,299 1,485 1,856 1,494 932 1,166 1,399 1,632 1,865 2,331 1,128 1,410 1,692 1,974 2,256 2,256 2,270 266 533 533 533 535 536 536 on-pk Savings Perunit 0.00 584 729 875 1,021 1,167 706 882 1,059 1,235 1,412 1,421 465 581 697 813 929 935 167 208 250 250 292 335 417 Coin Savings Per Unit 0.116 0.145 0.174 0.204 0.233 0.291 0.147 0.184 0.221 0.257 0.294 0.368 0.132 0.165 0.198 0.231 0.264 0.330 0.101 0.126 0.151 0.176 0.201 0.177 0.221 0.265 0.309 0.354 0.356 Non-Coin Demand Savings Per Unit 0.165 0.206 0.248 0.289 0.330 0.413 0.148 0.185 0.222 0.259 0.296 0.298 0.113 0.141 0.169 0.197 0.226 0.282 0.282 0.198 0.248 0.298 0.347 0.399 0.399 0.131 0.163 0.196 0.228 0.261 0.263 RATE DATA Rate Class: \$/kW: \$/kWh, OnPeak: \$/kWh, Off-Peak: 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00 8888888 8 8 8 8 8 8 DEMAND/ENERGY SAVINGS # H H 8.78 6.78 6.78 6.78 8 8 8 8 8 9.30 9.30 9.30 9.30 9.30 9.9 9.9 9.9 9.9 9.9 0.09 0.09 0.07 0.08 0.07 0.07 0.02% Base 5 5 5 5 5 5 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 Base $\overline{\nu}$ $\overline{\nu}$ $\overline{\nu}$ $\overline{\nu}$ $\overline{\nu}$ $\overline{\nu}$ $\overline{\nu}$ **ερερερ** 5 5 5 5 5 5 2 2 2 2 2 2 2 EE.* 7.11 7.11 7.11 7.11 7.11 9.17 3,11,6 3,11,6 3,11,6 1,16 1,16 1,16 12.1 12.1 12.1 12.1 12.1 EE SEER 7 7 7 7 7 7 8 8 8 8 8 8 8 4 4 4 **4 7 7** 5 5 5 5 5 5 weighted Average Weighted Average Surmer On-pk Energy AC (S/kWh): Surmer Off-pk Energy AC (S/kWh): Winter On-pk Energy AC (S/kWh): Winter Off-pk Energy AC (S/kWh): Unit Size Tors) 2.5 3 3.5 4 2.5 κ κ 7.5 4 2.5 δ.5. 4 2.5 κ 8.5 2.5 ProgramAdmin Costs (S/ unit): IRP DiscountRate: Packaged and Split Heat Pump 17 SEER Conservation Life (yrs): Social Discount Rate Packaged and Split Heat Pump Packaged and Split Heat Pump Demand AC (S/kW): Packaged and Split Heat Pump Packaged and Split PROGRAM DATA ProgramLife (yrs): NTC Ratio 16 SEER 18 SEER 14 SEER 15 SEER

Incertive Calculations Programmable Themostats (Heating Settub

Schools Program - New HVAC

PROGRAM DATA				12	RATE DATA				OPERATING DATA**	DATA**				OTHER FACTORS	TORS		
Measure Life (yrs) *.			11	<u> </u>	Rate Class:			ان	On-Pk Savings Ratio	s Ratio.		%		Line Loss Fa	ine Loss Factor-Demand:	9.5%	
ProgramLife (yrs):			20	V 7	S/kW:		0.00	J	Off-Pk Savings Ratio:	s Ratio		100%		line Loss Factor-Energy.	tor-Energy:	9.5%	
Demand AC (\$/kW):			66.44	U)	S/ kWh, On-Peak:	eak:	0.11	S	Summer Ratio.	~		20%		Capacity Reserve Factor:	serve Factor:	%	
Summer On-pk Energy AC (S/kWh):			0.08	<u>v)</u>	S/kWh, Off-Peak:	eak:	0.11	>	Winter Ratio:			20%		Application:		RET	
Summer Offick Energy AC (S/kWh):			90.0					의	Coincidence Factor	Factor:		00		Cost Basis:		Full Installed	
Winter On-pk Energy AC (\$/ kWh):			0.07														
Winter Off-pk Energy AC (\$/kWh):			0.07														
Program Admin Costs (\$/ unit):			¥														
Discount Rate:			9.05%														
Social Discount Rate			4.00%														
NTG Ratio.			100%														
DEMAN	DEMAND/ ENERGY SAVINGS	NGS				INCE	NTIVE CAL	INCENTIVE CALCULATIONS	S		cus	CUSTOMER COST/SAVINGS	ST/SAVIN	SSI	WGT.	%Incent	Societal
	Nan-Coin.	Cojn.			RP	Social											
-	Demand	Demand	On-pk	0#₽	₹	≧			₹		<u>11</u>	Cost					
<u> </u>	Bldg Savings	Savings	Savings	Savings	Benefit	Benefit			Cost		cost	Savings	Payback	ack			
Unit Blog A	Area PerTstat	PerTstat	PerTstat PerTstat PerTstat	PerTstat	PerTstat PerT stat Incentive (PerTstati*** PerTstat	erT stat In	centive (Pe	*Tstat***	PerTstat	NPV	PerTstat	PerTstat wo/Inc.	wo/Inc.	wInc.	Weighting		
Type (sc	(sq.ft.) (KW)	(KW)	(KWh)	(KWh)	(\$)	(\$)	(\$)	%bv	(\$)	(S)	(S)	S	(AIS)	(AVS)	Factor**	6%)	BC Ratio
Prog Therm Education 374,999	00:0 666,	0.0	0	5,688	2,668	3,438	204	%8	204	2,464	204	645	0.3	0:0	100%	100.0%	16.8
Weighted Average 374,999	00.0	0.00	0	5,688	2,668	3,438	204	%8	8	2,464	84	645	0.3	0:0	100%	100.0%	16.8
*Measure Lifetime based on DEER 2008 eval lations	s evaluations																
**Operating data, weighting factors based on engineering assumptions.	ed on engineerir	g assumptic	5.														
***Incentive based on 2011 ProgramPlanning.	anning.																
Weighted Average Check OK	ЭĆ	OK	ОК	ОК	OK O	OK 0	OK O	ОКО	ок ок		ОК	ОК	δ	oK O	οκ	OK	OK

Incertive Calculations
Window Films

Schools - New HVAC

%Incert Societa 2.7 2.4 2.5 1.9 2.8 2.5 2.0 2.0 š 100% 10% 10% 10% 10% 10% 10% 10% ö 8 9.5% 9.5% 0% RET Weighting Factor*** WCT. 15% 15% 15% Š Payback Winc. 1 CUSTOMER COST/SAVINGS 8 ŏ 0000 8888 OTHER FACTORS
Line Loss Factor - Denanch
Line Loss Factor - Energy,
Capacity Reserve Factor,
Application
Cost Basis. wo'inc. 5.01 ö 4.3 4.9 6.0 4.4 5.0 4.8 6.1 Cost Savings (\$) 0.62 0.53 0.56 0.44 0.60 0.52 0.55 0.43 0.53 ŏ Cost (S) OK **80 80 80** 5 8 9 9 9 8 8 8 8 8 8 NPV (S) 2448 2444 PV Program Cost INCENTIVE CALCULATIONS Recommended Incentive** (\$) %PV 50% 58% 70% 51% 59% 71% 71% 28% š Based on average of 3M warranty periods 11ttp://sotutions.3m.com/wps/portal/3M/en_US/Window_Film?sotutions/Resources/Links/Warrantides/ OPERATING DATA***
On-Pk Op. Hours %
Off-Pk Op. Hours %
Summer Ratio.
Winter Ratio. Coincidence Factor **888** š Societal PV Benefit (\$) 2 4 6 7 2 9 9 4 IRP PV Benefft (\$) 0.00 Off-pk Energy Savings (KWh) X RATE DATA
Rate:
S/kW:
\$/kWh, On-Pea On-pk Energy Savings (KWh) Coincident Demand Savings (KW) 0.002 0.002 **Incertive based on 2011 UES ProgramPlanning. **Weighting Factor and Operating Data based on engineering assumptions. DEMAND/ENERGY SAVINGS

NOT Coin Coint
Demand Der
Shading Savings Sav
V Coefficient (kW) (K) 0.002 0.002 0.002 0.002 0.002 0.002 74.78 0.09 0.07 0.07 0.07 NA 9.02% 4.00% 0.52 0.58 0.56 0.65 0.52 0.58 0.56 0.65 Weighted Average Surmer On-pk Energy AC (\$/kWh):
Surmer Off-pk Energy AC (\$/kWh):
Writer On-pk Energy AC (\$/kWh):
Writer Off-pk Energy AC (\$/kWh):
ProgramAdriristative Cost (\$/kWh) 0.67 0.67 0.66 0.82 0.67 0.67 0.66 0.82 Discount Rate: Societal Discount Rate: Electric Cool Only VS 60 VS 61 VS 70 VS 80BL Electric Cool/ Heat VS60 VS61 VS70 VS80BL ProgramLife (yrs): Demand AC (\$/ kW): WindowFilm PROCRAMIDATA Measure Life (yrs) NTC Ratio

Incertive Calculations Daylighting Controls

PRCORAMIDATA					 	RATE DATA				Ö	OPERATING DATA*	ATA"				OTHER FACTORS	rors		
Measure Life (yrs):		-	15		LE	Rate:				Ō	On-PK Op. Hours:	JIS:		1,316	<u> </u>	ine Loss Fac	Line Loss Factor-Demand		9.5%
Program Life (yrs):			Ŋ		<u>v</u>	S/kW:			0.00	0	Off-PK Op. Haurs:	JES:		1,584	<u> </u>	ine Loss Factor-Energy.	:tor-Energy:		9.5%
Demand AC (\$/KW):			74.78		Ŋ	\$/kWh, On-Peak:	reak:		0.11	<u> </u>	Total Hours:			2,900	ێ	apacity Res	Capacity Reserve Factor:		8
Summer On plk Energy AC (S/kWh):	Wh:		0.09		Ϋ́	\$/kWh, Off-Peak	eak:		0.11	Š	Summer Ratio:			20%	∢	Application		RE	RET / NEW
Summer Off-pk Energy AC (\$/kWh):	Wh:		0.07							<u> </u>	Winter Ratio:			20%	<u>ত</u>	Cost Basis:		ß	Full Installed
Winter On pk Energy AC (\$/kWh):	VP.		0.08							ű	Coincidence Factor.	actor:		0.93					
Winter Off-pk Energy AC (S/kWh)	Ž.		0.07							I	VAC Interact	HVAC Interaction Factor (Demand)	mand:	0.20					
Program Admin Costs (S/ unit):			Z							<u>_</u>	VAC Interact	HVAC Interaction Factor (Energy)	ergy:	0.17					
Discount Rate:			9.02%							!									
Social Discount Rate:			4.00%																
NTG Ratio.			100%																
																	•		
	DEMAN	DEMAND/ENERGY SAVINGS	SAVINGS					INCEN	VTIVE CAL	INCENTIVE CALCULATIONS	S		CUSTG	CUSTOMER COST/SAVINGS	/SAVINGS		WGT.	%Incert	Societal
			Non-Coin.	Coin															
			Demand Demand	Demand	onpk	Off-pk	IRP PV SOCIAL PV	ocial PV			₹	_	lici.	Cost					
	Connected	Day.	Savings Savings		Savings	Savings	Benefit	Benefit	Recommended	3uded	Cost	_	cost	Savings	Payback	ž			
Control	Load***	Savings	PerkW		PerkW	PerkW	PerkW	PerKW	Incertive**		Perkw n	NPV Pe	PerkW	PerkW \	wo/Inc.	WITC.	Weighting		
Type	(Watts) F	Fraction****	(KW)	(KW)	(KWh)	(KWh)	(\$)	(\$)	(\$)	%PV	(\$)	(2)	(S)	(S)	(AIS)	(SIA)	Factor	%	BC Ratio
SIDE ON THE STREET	86	7002	202.0	2753	208	200	5	1775	7,	,			Ĭ.	172	2 3		,01°	30U1	17
	3	0270	5000	0.55	5	200	200	222	6//	_			7	3	3	3	2	3	:
SIDELIGHTING - STEP	1000	44%	0.528	0.491	8/9	815	1329	1836	775	- -		554 7	775	169	4.6	0.0	10%	,00t	2.4
SIDELIGHTING - CONTINUOL	000	%95	0.672	0.625	862	1038	1692	2336	1358	۳-	1358 3	334 1	1358	215	6.3	0:0	20%	100%	1.7

*HVAC interaction factors from "Engineering Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demand IC of 0.40. **Incentives based on 2011 UES Program Planning. ****
*****Connected load assumes 8 fixtures at 136 watts per fixture

12.4 13.5 2.9

100% 100% 100%

15% 15% 30%

0.0

0.9

200 219 239

176 176 905

1395 1546 968

176 176 905

000

176 176 905

2169 2378 2586

1571 1722 1873

964 1056 1149

801 878 955

0.580 0.636 0.692

0.624 0.684 0.744

52% 57% 62%

<u>\$</u> \$ \$

SKYLIGHTING - ON/OFF
SKYLIGHTING - STEP
SKYLIGHTING - CONTINUOU

3.0

100%

100%

0.0

207

751

873

751

48%

751

2242

1624

966

828

0.600

0.645

24%

1000

Weighted Average

***Daylighting Savings Fractions are sourced from Lawerence Berkely Labs Nomographs
****Weighting factors based on engineering assumptions.

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Veighted Average Check	

Incertive Calculations Delamping Removing lamps with no replacement

DPOCP 486 DATA	-	RATE DATA				OPER AT ING DATA	DATA					ľ	OTHER FACTORS)RS		ŀ	
Moderne Revent	ŕ	D 2 ft				On-PK On Hours:	285		1.447	4		ك	Line Loss Factor - Demand	T-Deman	ğ	9.5%	
Medaulic Life (yla)	<u>-</u>	7 dec.		5		Office Con Lights			47.4	- 2		_	ine Loss Eactors Enemy	r.Enemy	. ا	200	
Programume (yrs):	n	× × ×		3		1001			* '				יייייייייייייייייייייייייייייייייייייי	1 1 1 1		5	
Demand AC (\$/kW):	74.78	S/ kWh, On-Peak:	zk:	0.11	<u>-</u>	rotal op. Hours:	US:		3,18	37		_	Capacity Reserve Factor:	We had tool:		Š	
Summer On plk Energy AC (\$/ kWh):	0.09	S/kWh, Off-Peak:	zak:	0.11	-1	Summer Ration	č		S.	8		•	Application			RET	
Summer Official Energy AC (S/kWh):	0.07					Winter Ratio.			20%	%		-1	Cost Basis:			Retro	
Winter On ok Energy AC (S/ KWh):	90.0					Coincidence Factor:	Factor		9.0	93							
Winter Officik Energy AC (S/kWh):	0.07				_	HVAC Interaction Factor (Demand)	tion Factor((Demand):	1.2	23							
Program Admin Costs (\$/ kWr):	0					HVAC Interaction Factor (Energy):	tion Factors	(Energy):	1.1	1.15							
	9.02%																
tRate	4.00%																
	700%																
			DEMAND/ENER	/ENERGY SAVINGS			INCE	INCENTIVE CALCULATIONS	LATIONS		٦	USTOMER	CUSTOMER COST/SAVINGS	\dashv	WGT. %	%Incent	Societal
Li-		Non															
		Coincident	coincident	Onto	OFF		Social		¥		_				_		
	World	Demand	Demand	Energy	Energy	2	≥	Recommended			ü	Cost	Payback	٦			
Measure	Base	Savings	Savings	Savings	Savings		Benefit	Incertive**	Cost	NPV	cost	Savings	wo'inc. w'i	w/Inc. Wei	Weighting		
Type	Watts	(KW)	(KW)	(KWh)	(KWh	(\$)	(S)	(S) %bv			S	(S)	(AIS)	(VIS) F2	Factor	6%	BC Ratio
nelamina	2	0.161	0.149	121	145	27.7	383	6.36 2%	9	27.7	6.36	8	0.2	0.0	100%	100%	60.2
200	4,																
No Delamping took place in 2009 in UNSE service tentitory. Data replicates TEP MAS analy	vice territory. Data re	eplicates TEP M.	AS analysis, exce	sis, except for avoided costs and rate data.	costs and rate	ctata.											
*Based on DEER 2008 EUL of 70,000 (rate life of ballast) annual operating hours by buildii	e of ballasti/ amuai	operating hours	by building type	ng type or 15, whichever is lower.	er is lower.												
**Based on 2011 UES ProgramPlanning.																	

Incentive Calculations Energy-Efficient Exit Signs - Retroff Applications Replace Inefficient Exit Signs with LED Exit Signs

Schools - New Lighting

PROGRAM DATA			RATE DATA				OPER AT ING DAT A	DATA					의	STHER FACTORS	SS.		_
Measure Life (vrs) ₹.	16		Rate:			<u></u>	On-Pk Op. Hours:	ous:		3,976				ine Loss Factor · Demand:	- Demand:	6	%
ProgramLife (vrs):	ιΩ	<i>3,</i>	S/kW:		0.0	<u> </u>	OFFPK Op. HC	XIIS		4,784			_	ine Loss Factor - Energy.	- Energy:	თ	%
Demand AC (\$/kW):	77.03		S/kWh, On-Peak:	ak:	0.11	_	Total Op. Hours:	IS:		8,760			<u>U</u>	Capacity Reserve Factor:	e Factor:		%
Summer On ok Energy AC (\$/ kWh):	600		S/kWh, Off-Peak:	ak:	0.11	<u>~</u> ;	Summer Ratio.	~		20%			₫	pplication		œ	<u></u>
Summer Official Energy AC (S/ KWP):	0.07	•					Ninter Ratio.			20%			의	Cost Basis:		Full installed	8
Winter On blk Energy AC (\$/ kw/h):	0.08						Coincidence Factor:	-actor:		0.93							
WinterOffick Energy AC (S/kWh):	0.07						HVAC Interaction Factor (Denand):	tion Factor (C	emand:	1.10							
Program Admin Costs (\$/kWh):	0						HVAC Interaction Factor (Energy)	tion Factor (E	nergy!:	1.13							
Discount Rate:	9.02%																
Social Discount Rate	4.00%																
NTG Ratio:	100%																
				DEMAND/ENERGY SAVINGS	GY SAVINGS			INCER	INCENTIVE CALCULATIONS	NONS	H	D)	STOMER (CUSTOMER COST/SAVINGS	s WGT.	. %Incert	nt Societa
			Non-		o vo	Off.	E E	Social		≧							
		World			Energy	Energy			Recommended	Program			Cost	Payback			
Measure	Ш	Base	Savinos		Savings	Savings		Benefit	Incentive**	Cost	Μ	COST	Savings	wo'inc. w'inc.	nc. Weighting	ting	
Two	Watts	Watts		(KW)	(KWh)	(KWh	(\$)	(\$)	(S) %PV	(S)	-		S	(NZ) (NZ)	s) Factor	% 6	BC Ratio
- Comment																	
Weighted Average	ın	9	0.124	0.115	265	319	494	693	55 11%	55	658	55.10	99	0.8 0.0	100%	% 1 100%	12.6

* Based on DEER 2008. **Based on 2011 UES ProgramPlanning. ***2010 MER R eport

incertive Calculations Integral Screwin and Hardwire CFLs Repace Incandescents with CFLs

															0.00			
PROGRAM DATA			RATE DATA			ات	OPERATING DATA	DATA						OI HER FACIORS	AC IORS			
Measure Life (yrs) *:	7		Rate:				On-Pk Op. Hours:	OUIS			778			Line Loss	ine Loss Factor - Demand	mand	9.5%	
ProgramLife (yrs):	נט		S/KW:		000		Off-PK Op. Hours:	OUIS:			926			LineLoss	Line Loss Factor - Energy,	egy.	9.5%	
Demand AC (\$/kW):	50.92		S/kwh, on-Peak:	X :	0.11		Total Op. Hours:	nes:			1,714			Capacity R	Capacity Reserve Factor:	ij	8	
Summer On-pk Energy AC (\$/ kWh):	90:0	<u>-</u>	S/kwh, Off Peak:	*	0.11		SummerRation	8			20%			Application	۲		RET	
Summer Official Energy AC (\$/kWh):	0.04	•					WinterRation				20%			Cost Basis		F	Full installed	
Winter On-pk Energy AC (\$/ kWh):	0.05						Coincidence Factor.	Factor:			0.93							
Winter Off-pk Energy AC (\$/ kWh):	0.05						HVAC Interaction Factor (Denand):	tion Factor((Demand:		1.22							
Program Admin Costs (\$/ kW h):	0						HVAC Interaction Factor (Energy)	tion Factor	(Energy):		1.13							
Discount Rate:	9.02%																	
Social Discount Rate	4.00%																	
NTG Ratio:	100%																	
			1	21,40,41	John W. J. St.			1014	The state of	STACT TO THE		-	Tailo	SOMING STATES COLUMNICS	SUNICE	TOW	1,000mt	Cocional
			1	DEMINION EINERGY SAVINGS	COLL SAVINGS				N NE CA	INCEININE CALCULATIONS			1031	WER COST/ 37			/UN PCO R	3000
			Coincident	Coincident	Onbo	Off-pk		Social			2					_		
	占	Incand	Demand	Demand	Energy	Energy		≧	Recommended		nogram	<u>10</u>	cr. Cost	J	ack			
Measure	¥	蓝		Savings	Savings	Savings	Berrefit	Benefit	incentive**		Cost NPV	_			wo'inc. w'inc. Weighting	Weighting		
Type	Watts	watts		(KW)	(KWh)	(KWh)	(\$)	(S)	(\$)	%bv		(3)	(\$)	(yrs)	(MS)	Factor	%	BC Ratio
Integral Screw In	4	7	0.127	0.118	20	9	22	24	7	48%	11 13	2 7	1 13	5 0.8	0:0	100%	100%	2.3
Hardwire Plug In	16	29	0.115	0.107	45	55	8	22	15	78%	15 6	-			0.0	100%	100%	1.4
* Based on average manufacturer rated life and deemed armual usage hours.	e and deemed	armual usaç	e hours.															
**Based on 2011 UES ProgramPlanning.																		

Incertive Calculations
ENERGY-EFFICIENT HID FAXTURES
Repace HID Systems with Linear-fluctscent 78 and 75 Systems

1008 1008 1009	PROCRAM DATA CORRONAGIOT Ile (NR): Program life (NR): Dernard AC (S/ KW): Surmer Or NR F FRESK (S/ KW):	18 5 81.72 0.09		RATE DATA Rate: S/kW: S/kWh, OnPeak: S/kWh, OffPeak:		0.00	96833	OPERATING DATA ON-PK OD HOUS: OFFPK OD HOUS: SUMMER RATO WITHER RATO CONTINUENT RATO					999 3,581 50% 50%	10-886		<u> </u>	OTHER FACTORS The Loss Factor - Demand The Loss Factor - Energy. Catacity Reserve Factor: Attacation	SS - Demand: - Energy: e Factor:	9.5% 9.5% 0.0% RET RET	9.5% 0.0% RET		
Mail	Surface Organical Control of State Organical Con	0.08 0.08 NA 9.02% 4.00%							1					1		<u> </u>	I I			. L	1	1
Handis H				DEMAND/ENERG	SAVINGS		ľ	Ш	4		+		INCENTIVE.	CALCULATIO		+	3	TOMER CO	CUSTOMER COST/SAVINGS	WGT.	%Incert	Societal
Mark 150 Mark 140 Mark Ma				i	ì	t			Comodent						Α			;	Jones			
Mile 150 186 187			Base	H E	Fixture	ramb Famb		Savings	Savings					Tives ****	Cost	MPV		Savings worling.	TC. WITC.	weighting		
HAN TOOM TOOM TOOM TOOM TOOM TOOM TOOM TOO			Watts	Type***	Config		/atts	(KW)	(KW)		-		(S)	%PV	S	(S)		(S) (yrs)		Factor*	6%	BC Ratio
Head	£		186	ES4TS/HO	24 am	25	117	<i>1</i> 000	90'0	88				31%	88	187				%0 	100%	7.6
MH 400 458 F58TFHO 64.arm 54 234 022 021 224 757 887 2.06 ii 108 178 178 178 168 178 <t< td=""><td>SWITTENS</td><td></td><td>6</td><td>PS4TS/HO</td><td>Z-l am</td><td>24</td><td>179</td><td>0.11</td><td>0.10</td><td>11</td><td></td><td></td><td>•</td><td>23%</td><td>102</td><td>337</td><td></td><td></td><td></td><td>2%</td><td>100%</td><td>10.0</td></t<>	SWITTENS		6	PS4TS/HO	Z-l am	24	179	0.11	0.10	11			•	23%	102	337				2%	100%	10.0
750 870 PSATYSHO 6-Lamp 54 351 0.46 0.63 459 1557 187 4223 188 9% 168 1588 150 100 100 0 0 0 0 0 9% 189 9% 168 1580 150 180 182 142 186 187 180 187 189 187 189 187 189 187 189 187 189 187 188 188 187 189 187 189 187 189 187 188 187 189 188 188 187 188 188 188 187 188	200		82		4-tamp	2.2	234	0.22	0.21	224				12%	60	37.8		111 1.0	00	35%	4001	18.9
100 108 CASATISHO 4-lamp 54 468 0.67 0.57 612 2,689 2,482 5,800 2,186 2,800 2,186 2,204 2,204 2,204 2,204 2,204 2,204 2,00 0			810		6-Lamp	25	351	0.46	0.43					9%6	168	1,648				1%	400%	25.1
150 185 1875 18.4 19.4 19.4 10		,	1080		4-Lamp	24	468	0.61	0.57		_			%6	218	2,204				5%	400%	25.8
150 185 Fazra 2,4amp 32 77 0.11 0.11 115 382 447 1,040 42 9% 42 405 200 200 432 Fazra 6,4amp 32 719 0.24 0.25 259 0.88 946 2,199 74 8% 74 875 400 483 Fazra 6,4amp 32 219 0.24 0.25 259 0.88 946 2,199 74 8% 74 875 500 1080 2045278 6,4amp 32 439 0.27 0.25 372 1,728 1,723 3,422 148 0.79 1,724 150 150 Fazra 6,4amp 54 170 0.07 0.07 0.07 0.07 0.07 150 150 424 424 424 424 424 424 424 424 150 150 425 424 424 424 424 424 424 150 150 255 425 424 424 424 424 150 150 255 425 424 424 424 150 150 255 425 424 424 150 150 255 425 424 424 150 150 255 425 424 150 150 255 425 425 150 150 255 425 425 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255 150 150 255 255 255 255								0.00														
250 230 F3778 8.4mp 32 719 0.18 0.16 716 85 657 878 75 888 74 88 75 88 74 88 75 88 75 88 89 74 88 75 88 89 74 88 75 88 75 88 89 74 88 75 76 88 76 88 74 88 75 78 88 74 88 <td></td> <td></td> <td>185</td> <td>F32T8</td> <td>2-Lamp</td> <td>32</td> <td>72</td> <td>0.11</td> <td>0.11</td> <td></td> <td></td> <td></td> <td></td> <td>%6</td> <td>42</td> <td>£6</td> <td></td> <td></td> <td>_</td> <td>%6</td> <td>,00¢</td> <td>24.8</td>			185	F32T8	2-Lamp	32	72	0.11	0.11					%6	42	£6			_	%6	,00¢	24.8
400 488 F3778 64amp 32 279 0.24 0.25 239 868 946 2,199 74 8% 74 </td <td></td> <td></td> <td>290</td> <td></td> <td>3-Lamp</td> <td>32</td> <td>114</td> <td>0.18</td> <td>0.16</td> <td></td> <td></td> <td></td> <td></td> <td>8%</td> <td>23</td> <td>639</td> <td></td> <td></td> <td>_</td> <td>2%</td> <td>100%</td> <td>28.2</td>			290		3-Lamp	32	114	0.18	0.16					8%	23	639			_	2%	100%	28.2
750 810 2x F3718 6 Jamp 32 438 0.57 0.58 372 1,738 1,472 3,422 148 70% 148 1,534 1000 1080 0.06 0.06 0.06 0.07 0.07 0.0 0 0 0 448 2,538 188 206 206 188 206 188 206 206 206 206			458		егаш	32	219	0.24	0.22					%	74	872			_	50%	100 %	29.7
100 100			810		6-Lamp	32	438	0.37	0.35					10 %	148	1,524		185 0.8	000	28 5	100%	23.1
150 180 F47F9H0 24.amp 54 117 0.07 0.07 173 247 288 672 83 296, 83 206 229 229 249			<u> </u>		oreally	7	2	800	8					•	<u>?</u>	- Cer.' 7				-	<u> </u>	-
250 295 FS4T5HO 4-lamp 54 279 0.12 0.11 116 392 459 1.067 102 22% 102 357 405 405 405 405 405 405 405 405 405 405			190		2-Lamp	24	117	0.07	0.07					79%	83	506				%0	100%	8.1
400 464 F54T5HO 44.amp 54 224 0.22 0.21 230 778 910 2,116 109 172% 109 801 150 150 150 150 150 150 150 150 150 1			295	_	3-Lamp	25	179	0.12	0.11			•		75%	1 02	357		58 1.8	0.0	2%	400%	10.4
150 150 FSZT8 24amp 32 72 0.17 0.11 18 359 467 1086 42 9% 42 425 250 256 FSZT8 3-4amp 32 114 0.18 0.17 181 672 716 1,665 57 8% 57 659 400 460 FSZT8 6-4amp 32 219 0.25 0.25 245 828 870 2,254 74 8% 74 896			464	_	4-Lamp	¥	234	0.23	0.21					12%	90	28				10%	100%	19.4
150 150 F3718 24amy 32 72 0.12 0.11 118 359 445 1.086 42 9% 42 425 250 259 F5718 3-4amy 32 114 0.18 0.17 181 612 716 1.665 57 8% 57 659 400 460 F3718 6-1amp 32 219 0.25 0.23 245 828 970 2,754 74 896								0.00														
250 255 F5718 3-tamp 3.2 114 0.18 0.17 181 612 716 1,655 57 8% 57 659 400 460 F5718 6-tamp 3.2 219 0.25 0.23 245 828 970 2,254 74 8% 74 896			96		2-Lamp	32	72	0.12	0.11		_			%6	42	425		59 0.7	00	%0	400%	25.9
400 464 F3Z18 6-tamp 32 219 0.25 0.23 245 828 970 2,254 74 8% 74 896			562		3-Lamp	32	114	0.18	0.17					% 8	23	629				%	,00¢	29.0
			464		6- Lamp	35	219	0.25	0.23					% 80	74	968					,001 %	30.4
Weichreich Ayearge 395 452 452 623 0.21 230 777 910 2,115 96 11% 96 814 96	Weldnied Average	395	452			45	222	0.23	0.21	230	Н			11%	96	814		114 0.9	9.0	400%	100%	22.0

Weighing Factors based on engineering assumptions.

Weighing Factors based on engineering assumptions.

Weighing Factors brank Factoring Memors for Estimating the impacts of DSM Propains, Volume 2: Functionable foundation for Residential and Commercial Englished Heritors for Source shows a summer demand IC of 0.40.

"See Enclose Assumptions but for more deels."

"The Spray Part of the Sp

INCOMING CALLABORS
ENER CY-EFFICIENT INDUCTION LIGHTING
RECACE HID Systems with incalction Lighting Systems

						-					ľ						ŀ			OTHER	OTOTO COLLOS		
PKOCKAM DALA	¥					<u>≥ </u>	KAIEDAIA				_	PERAI INC D	¥				Ī				200		
Measure Life (yrs):	ij		18			R.	Rate:					On-PK Op. Hours:	16				1,316			LineLo	Line Loss Factor (Denand)	:io:	9.5%
ProgramLife (yrs):	÷		ĽΩ			Š	S/kW:			000		Office Op. Hours:					1,584			rine La	Line Loss Factor (Energy):	ä	9.5%
Demand AC (\$/kW):	KW):		81.72			Š	kwh, on-Pe	ak:		0.11		Total Hours:					2,900			Capacit	Capacity Reserve Factor:	ñ	80
Summer On-pk Energy AC (\$/ kw/h):	Energy AC	(S/ KWN):	0.09			75	S/kWh, OffPeak:	ak:		0.11		Summer Ratio.					% %			Application	Ę		RET
Summer Official Energy AC (S/ KWN)	Energy AC	(S/kWh):	0.07								_	WinterRatio					Š			Cost Basis	ŞŞ:		Full installed
Winter On-pk Energy AC (S/kWh):	nergy AC (S	VKWh:	0.08									Coincidence Factor.	Þ				0.93						
Winter Offick Energy AC (\$/kWh):	nergy AC (S	VKWD:	80:0								_	HVAC Interaction	HVAC Interaction Factor (Denand)*	4.			0.20						
Program/Admin Costs (S/unit)	COSTS (S/ur	ë	AN									HVAC Interaction	HVAC Interaction Factor (Energy)				0.17						
Discount Rate:			9.02%																				
Social Discount Rate:	:Rate:		4.00%																				
NTG Ratio			100%																				
				DEM	AND (ENED	DEMAND (ENED CY CAVINGS	پ				ľ		INCEN	INCENTIVE CALCILI ATIONS	ATIONS			SIIC	TOMER CO	CUSTOMER COST/SAVINGS	TOW	%Incent	Societal
				DEIN	AND/ENER	NI SAVIN	3				T			145	Sign			Š	2000				
							_	Non-Coincident	Coincident	Onpk	OFFIX					3							
Base	Base	Base EE		Ш	ш	Delta	Delta	Demand	Demand	Energy	Energy	RP	Societal PV	Recommended	anded	Program			j g	Payback	\neg		
Lamp				Lamp	Ŧ	Lamp	Fixture	Savings	Savings	Savings	Savings	Benefit	Benefit	Incertitve***	£**	cost	VPV	cost	ĸ.	<i>></i>	_		
Type	watts	Watts Type		wate	watts	watts	Watts	(KW)	ικw	(KWh	(KWh)	(Ş)	(S)	(Ş)	%PV	Ŝ	S)	(<u>S</u>)	(5)	(yrs) (yrs)	Factor	%	BC Ratio
WH - 70W		94 Induction - 40 W	W 04	9	4	R	£2	0.064	0.059	82	86	980	569	53	85%	153	13	53	8	5.	%9	100%	1.8
MH-100W	001	126 OL - 55W		16	95	45	2	0.084	0.078	8	821	244	353	146	%09	146	88	146			%9	100%	2.4
MH - 100W	•		.70W	8	7	8	15	0.065	0.061	85	δ	061	276	146	77%	146	45	146	7	7.0 0.0	%9	100%	1.9
MH - 100W	001			88	48	15	33	0.047	0.044	8	73	137	198	146	107%	146	φ	146			%9	100%	1.4
MH - 150W	<u>8</u>	185 OL - 55W		당	83	8	129	0.155	0.144	198	523	450	652	151	%	1 5	536	151		3.1 0.0	%9	100%	4.3
MH - 150W		185 ICETRON - 70W	-70W	5	7	8	114	0.136	0.127	175	210	397	574	152	38%	152	245	152			%9	100%	3.8
MH - 150W	<u>8</u>	185 OL - 85W		88	82	65	86	0.118	0.110	151	182	25	497	152	44%	152	<u>8</u>	152			%9	100%	3.3
MH - 150W		185 ICETRON - 100W	-100W	5	102	B	83	0.099	0.092	128	72	290	419	159	22%	159	85	159		5.0 0.0	%9	100%	2.6
MH - 175W	175 2	210 OL - 85W		88	48	8	123	0.148	0.137	190	228	430	623	156	36%	35	275	156			%9	100%	4.0
MH - 175W		210 ICETRON - 100W	-100W	6	102	75	108	0.129	0.120	166	82	577	546	25	43%	1 64	213	164			% 9	100%	3.3
MH - 250W	250	295 ICETRON - 150W	-150W	021	153	5	142	0.170	0.158	218	263	496	717	8	%04	90	536	200	55	3.7 0.0	%9	100%	3.6
MH - 250W		295 OL - 165W	>	165	169	88	126	0.152	0.141	195	23.	442	640	308	47%	208	73 73	208			%9	100%	1.2
HPS - 150W	150	188 OL - 55W		ĸ	22	56	132	0.158	0.147	203	244	461	299	253	22%	253	202	253			%9	100%	2.6
HPS - 150W			- 70W	٤	7	8	117	0.140	0.130	179	216	407	289	254	%29	254	<u>12</u>	254			%9	100%	2.3
HPS - 250W	250 2	295 OL - 85W		88	28	165	508	0.250	0.232	321	388	728	1,053	249	32 %	249	479	249	88	3.1 0.0	%9	100%	4.2
HPS - 250W		295 ICETRON - 100W	· 100w	901	102	50	193	0.231	0.215	297	357	674	976	257	38%	227	417	257			%9	100%	3.8
HPS - 400W	-	463 ICETRON - 150W	-150W	55	153	250	310	0.372	0.346	477	574	1,083	1,567	288	27%	88	795	288			%9	700%	5.4
HPS - 400W	400	463 OL - 165W	>	165	169	235	294	0.353	0.329	454	546	1,029	1,490	296	29%	236	733	536			%9	100%	2:0
Weighted Average	e e							0,160	0.148	202	246	465	673	196	%05	196	269	196	51	4.6 0.0	100%	100%	5.4
																					ł		
*HVAC interacti	ion factors	*HVAC interaction factors from "Engineering Methods for Estinating the Impacts of DSM Programs, Volume 2:	hods for Estin	nating the in	rpacts of D.	SM Program	s, Volume 2: I	Fundamental Equations for Residential and Commercial End Uses," EPRI, 1993. This source shows a summer demandIC of 0.40.	ntions for Resid	ental and con	mercial End	USes," EPRI, 1	993. This source:	shows a surm	rer demandic	of0.40.							

Weighted Average Check

RET / NEW Full installed OTHER FACTORS
Line Loss Factor-Demand
Line Loss Factor-Energy.
Capacity Reserve Factor:
Application
CostBasis: 1,316 1,584 2,900 50% 50% 0.20 0.20 HVAC Interaction Factor (Demand *: HVAC Interaction Factor (Energy)* : Incertive Calcustions

Occupancy Sersos

Install Occupancy Sersos on Lighting and Outdoor Houses

One of the Company of the Co Coincidence Factor: Rate: \$/kWt; \$/kWt, On-Peak: \$/kWt, Off-Peak: 0.08 0.06 0.08 0.07 0.07 NA 0.02% Surmer On-pk Energy AC (S/kWh):
Surmer Off-pk Energy AC (S/kWh):
Winter On-pk Energy AC (S/kWh):
Winter Off-pk Energy AC (S/kWh):
Program/Actin Cost (S/kM):
Program/Actin Cost (S/kM):
Discourt Rate:
Social Discourt Rate Schools - New Lighting Demand AC (\$/kW): Measure Life (yrs): ProgramLife (yrs):

		^	DEMAND/ENERGY SAVINGS	ERGY SAV	INGS						INCEN	INCENTIVE CALCULATIONS	ULATION	,	_	CUSTOM	CUSTOMER COST/SAVINGS	AVINGS	WGT.	%Incert	Societal
	1					Non-Coin	Cain.								_						
	Coverage	Lighting	Coverage Lighting Connected			Demand	Demand	On pk	Off DK	IRP PV S	Social PV			ĭ		inci.	Cost				
	FIOOL	Power	Pag-	Energy	Demand	Savings	Savings	Savings	Savings	Benefit	Benefit	Recommended		COSTS	_	Cost Sav	Savings Payoacl	ç			
Space	Area (SF)** Density	Density	(Watts)	Savings	Savings	PerSnsr	PerSrsr	PerSnsr	PerSrisr	PerSnsr P	PerSrist Inc	PerSrsr Incentive (PerSrsr)***		PerSnsr I	NPV P6	PerSrsr Per	Persins worling	ic. w/inc.	Weighting		
Type	persensor	(Watts/SF)	persensor (Watts/SP) persensor	Factor	Factor	(KW)	(KW)	KWh	(KWh)	S	(Ş)	(S)	%PV	(\$)	S	(\$)	(S) (yrs)	(AVS)	Factor**	6%	BC Ratio
															_				_		
Office (Open Plan)	300	1.3	390	%92	10%	0.05	0.04	45	185	214	280	96	45%	96	117	96	38 2.5	0.0	11%	100%	2.9
Office (Executive / Private)	55	1.5	225	31%	12%	0.03	0.03	107	129	149	195	96	%59	96	25	98	27 3.6	0.0	%9	100%	2.0
Conidor	50	0.7	140	39%	16 %	0.03	0.02	8	δ	117	153	96	%28	98	8	88	21 4.6		11%	100%	1.6
Classroom	200	1.6	8	32%	13%	0.12	0.12	398	479	223	726	96	17%	, 96	157	98	100	0.0	11%	100%	7.5
Restrooms	120	1.0	120	46 %	18%	0.03	0.02	85	102	117	1 2	96	%28	9 8	2	96	21 4.6	-	11%	100%	1.6
Conference R com	300	1.5	450	37%	15%	0.08	0.07	257	309	357	468	96	27%	98	09:	98	64 1.5	0.0	%9	100%	4.9
Warehouse	625	1.4	844	20%	50%	0.20	0.19	920	782	902	1184	96	11%	æ 86	98	96	162 0.6		11%	,00 %BI	12.3
Mech / Elec Room	55	1.3	195	%62	46%	0.0 10.0	0.03	118	142	163	214	96	29%	96		96	29 3.3	0:0	11%	100%	2.2
Storage	55	1.1	165	48%	19%	0.04	0.03	121	145	168	220	96	28%	96		96	30 3.2	0.0	11%	100%	2.3
Copy Room	8	1.5	150	40%	16%	0.03	0.03	93	112	130	170	96	74%	98	23	96	23 4.1	0.0	11%	100%	1.8
Weighted Average	e 263	1.3	349	39%	16%	0.07	90'0	508	252	291	381	96	53%	98	194	96	52 3	0	100%	100%	4.0

HVAC interaction factors from Frogreeing Methods for Estimating the Impacts of DSM Programs, Volume 2: Fundamental Equations for Residential and Commercial End Uses," EPR1, 1993. This source shows a summer demand IC of 0.40.

"Coverage floor area, Weighting Factors from engineering judgment.

"This source shows a summer demand of 0.40."

"Incentives based on UES 2011 Program Planning.

Incertive Calculations High Efficiency Outdoor Lighting

PROGRAM DATA		RATE DATA	ΤA			<u> </u>	OPERATING DATA	DATA						OTHER FACTORS	CTORS		
Measure Life (vs):	2	Rate				Ιο	On-Pk Op. Hours:	ours:			6	986		Line Loss F	Line Loss Factor-Demand:		9.5%
ProgramLife (yrs):	ľ	S/KW:			0.00	0	Off-PK Op. Hours:	ours:			33	25		Line Loss F	Line Loss Factor-Energy:		9.5%
Denrand AC (\$/ kW):	55.65	\$/ kwh, on-Peak:	n-Peak:		0.11	_	Total Hours:				4380	8		Capacity R	Capacity Reserve Factor:		%0
Summer On-pk Energy AC (\$/kWh):	0:00	S/kWh, Off-Peak:	ff-Peak:		0.11	S	Summer Ratio:	Ħ			ĸ	20%		Application			RET
Summer Off-pk Energy AC (\$/ kWh):						<u> </u>	Winter Ratio.				K	20%		Cost Basis:			Full Installed
Winter On-pk Energy AC (S/ kWh):	90'0					U	Coincidence Factor	Factor:			Ö	0.02					
Winter Off-pk Energy AC (\$/ kWh):						J											
ProgramAdmin Cost (\$/ unit):	NA																
Discount Rate:	9.02%																
Social Discount Rate:	4.00%																
NTG Ratio.	100%																
														•			
	DEMAND/ENERGY SAVINGS	SY SAVINGS					INCEN	INCENTIVE CALCULATIONS	ULATIONS			CUSTOM	CUSTOMER COST/SAVINGS	AVINGS	WGT.	%Incert	Societal
		Non-Coin.	Coin	Onpk	Off-pk	₩.	Social			PV							
EE Base	Base	EE Demand Demand	Demand	Energy	Energy	Ճ	≥	Recommended		Program	Incr	Cost	Pa	Payback			
Measure Measure	Fixture	Fixture Savings	Savings		Savings	Benefit	Benefit	Incertive**		Cost NPV	Cost	Savings	wo'Inc.	w/Inc.	Weighting		
Type Type	Watts	Watts (KW)	(KW)	(KWh)	(KWh)	(\$)	(\$)	(S)	%PV	(S) (S)	(S)	(S)	(M2)	(AVS)	Factor*	6%)	BC Ratio
CFL (screwin, spiral) incandescent	ent 40	9 0.031	0.001	31	105	31		95'9	21%	7 25	_	15	0.4	0.0	2%	100%	5.5
CFL (screwin, spiral) Incandescent		13 0.047	0.001	47	159	84			14%		6.56	23	0.3	0.0	7%	100%	8.3
CFL (screwin, spiral) incandescent	ent 75	18 0.057	0.00	22	193	88	99	6.56	11%		6.56	78	0.2	0.0	21%	100%	10.1
CFL (screwin, spiral) incandescent	ent 100	23 0.077	0.00	11	780	78			%8	7 71	6.56	38	0.2	0.0	32%	100%	13.6
CFL (screwin, spiral) Incandescent	ent 150	32 0.118	0.002	118	399	119	137	7.89	7%			23	0.1	0.0	21%	100%	17.3
CFL (screwin, spiral) Incandescent	ent 250	55 0.195	0.003	195	629	197	226	24.78	13%		24.78	6	0.3	0.0	40%	100%	9.1
		100	3	į	į	8			, ,		+		5	8	7000	, age	7.77
	Weighted Average	0.087	0.001	8/	735	88	٦	8.59	30%	8	8.59	45	75	200		%A)	7.1.
*Weignting Factor based on engineering assumptions. **Incertive based on 2011 UES ProgramPlanting.	eering assumptions. maramPlanning.																
)														1		
Weighted Average Check		ŏ	ă	ă	ă	ă	ž	χo	X	OK OK	XO	ð	δ	ŏ	λ	OK	οK

Incertive Calculations REDUCED LIGHTING POWER DENSITY

PROGRAM DATA Measure Life (yrs): Programt ife (yrs): Demand AC (\$/kW):		_	KAI	1					בול ל	טויים סאוואס סאו א	1	-	1 24	2			Line Loss Factor - Demand	r - Demand	9 6
weasue Line (y/s): Programt He (y/s): Derrand AC (\$/ KVV):		Ę	1	עועאט .					ממטו				,						,
Programulifie (WS): Derrand AC (S/KW):		7 .	3 2 2				5			Office Op. Flows. (Short / Long)	(at / 108)		100.				line Loss Factor - Enemy	Y-Enemy	0.0
Derrand AL (5/ KW):	•	n 50	2/ K	V.	,		3 5		TOT ITOT	Op. 1043. 51	5		200				Caracity Becenve Earthr	Ve Eactor	Ĉ
	-	99.00	2/ KV	S/KVVII, OFFICIAL:	٠, د		5 5		L L	Summer Ratio			305.3				Amplication		NFW
Summer Office Energy AC (3/kWh):		90.0	3	3					Winte	WinterRatio			20%	-			Cost Basis:	_	Incrementa
Winter Oracle Energy AC (S/kNA):		800	INCE	NTIVE LEV	 iii				Coinci	Coincidence Factor:			60	<u> </u>		•			
Winter Offick Energy AC (5/kW/b):		0.07	S/ K	S / KW reduced			350		HVAC	HVAC Interaction Factor (Denand *****	ctorriberrai	- D	0.2	_					
ProgramAdmin Cost (S/ unit)		N.							HVAC	HVAC Interaction Factor (Energy) *****	ctor(Energy	******	0.17	_					
Discount Rate	-	905%												1					
Societal Discount Rate:	-	4.00%																	
NTG Ratio:		100%																	
	DEMAND/E	DEMAND/ENERGY SAVINGS		-					INCENTIN	INCENTIVE CALCULATIONS				CUSTOME	CUSTOMER COST/SAVINGS	VINGS	WGT.	%Incent	Societal
			Z						<u> </u>		≧		iici iic	Cost					
Floar	Baseline		LPD Der	Demand De	Demand				PV	Recommended	Costs		g Cost		- 1	яск			
2	# Od7			ю	v			∉	₩	entive	<u>د</u> ا.	_	Per Prict	ď	>	Winc.	Weighting	ţ	
Type SqFt*	Sq.Ft* (Watts/SF) (Watts/SF)	ı	Factor (K	(KW)	(KW)	(KWh)	Kwp	S)	(S)	%PV	(S)	(S)	(2)	(2)	(Sign	(AS)	Factor	6%)	BC Ratio
	;	;										Š	8	į	;	Ċ	č)	
	0.9			0.7	0.7	180, 1				%ZS 0	_	3 5	3 3	2,5	5.5	0.0	%	.00°	5 :
enter	1.2			3.2	2.9	7,85/		595'	9,920 2,9		7,304	860,4	7,304	1,214	4.2	0.0	%	% <u>0</u>	6 1
	1.2				2.1	3,437			2,098			5,254	2,098	£ 1	2.4	0.0	%6	300	2, 1
	1.3			6.0	0.8	1,345			2,748			1,55/	200	92	5.3	0 (%71	20.	9.0
Dining: Cafeteria/Fast Food 5,600	4.1	1.3			6.0	1,449						1,498	728	362	2.1	00	%6 	100%	55 D.
Dining: Family 5,600	1.6	1.4	10%	1.1	1.0	1,656	_					1,820	758	414	.	0.0	1%	100%	4.5
Dormitory 35,800	-	0.9	10% 7	4.3	4.0	6,616	1,960	_				5,456	4,845	1,653	2.9	0.0	1%	100%	2.8
Exercise Center 14,200	-	0.9	10%	1.7	1.6	2,624						2,164	1,922	929	2.9	0.0	%0	100%	2.8
Gymnasium 14,200	7	1.0	10%	1.9	1.7	2,887	3,473 6	4,494	5,896 1,922	22 43%	1,922	2,573	1,922	721	2.7	0.0	%0	100%	3.1
Qinic	-			1.2	1.2	1,922						1,585	1,407	480	2.9	0.0	5%	100%	2.8
•	- 6							_				-	32.669	13.376	2.4	0.0	%6	100%	3.3
ğ	<u> </u>												A BAE	1 652	, ,	2 6	%0	,00°	2 0
	- (5 4	0,0,0							1 2	2		3 8	0, 76	3 2 2) N
	υ.			77 :	1.7	3,412						000, r	226,1	200	0 5	2 6	Š è	906	4 6
acturing Facility	E: -	-		3.4	3.2	5,262							2,964	515,1	5.5	0.0	\$ i	%8,	2.0
	-			4.3	4.0	0,616	_						C#8,4	cca'l	67.	0.0	2%	8 8	2.8
sture Theater	1.2			2.0	1.9	3,149							1,922	787	2.4	0.0	8	%B!	5.5
£	1.1			6.	1.7	2,887							1,922	72	2.7	0.0	%	88	.5.
	-		` % 1%	8.	1.7	2,735							2,003	883	5.9	0.0	27%	10%	2.8
Parking Garage*** 21,900	0.3	0.3		0.7	0.6	2,878							773	653	1.2	0.0	%	100%	-6.1
Performing Arts Theater 14,200	1.6			2.7	2.5	4,199					1,922		1,922	1,049	1.8	0.0	%	400%	4.5
Police/Fire Station 15,500	-	6.0		1.9	1.7	2,865							2,098	216	2.9	0:0	%	400%	2.8
Post Office 14,200	Ξ	1.0	, %01	6.7	1.7	2,887							1,922	721	27	0:0	%	40%	3.1
Religious Building 10,100	1.3	1.2	, %01	1.6	1.5	2,427				1,367 36%			1,367	909	2.3	0.0	1%	100%	3.6
Retail (Other Than Mall) 9,700	1.4	1.3	, %01	1.6	7.5	2,510			5,126 1,3				1,313	627	2.1	0.0	29%	100%	3.9
Sports Arena 185,440	1.1	1.0	10%	24.5	22.8	37,698	-	٠.					25,096	9,419	2.7	0.0	%0	100%	3,1
Town Hall 15,500	1.1	0.1	.,	2.0	1.9	3,151	3,791						2,098	787	2.7	0.0	%0	100%	3.1
Transportation 21,900	-	6.0		2.6	2.4	4,047	_			2,964 47%			2,964	1, Ω	2.9	0.0	%0	400%	2.8
Warehouse 16,900	8.0	0.7	. 40%	1.6	1.5	2,499	_	3,890	5,104 2,3		2,287	1,603	2,287	624	3.7	0.0	%	100%	2.2
Workshop 6,500	1,4	1.3	10%	1.1	1.0	1,682	2,023	2,618		880 34%		1,739	8	420	2.1	0:0	%	100%	3.9
			ĺ				+	Ι.	1		1	-	-			;		, , , ,	ļ
Weighted Average 33,223	1.2	1.1	10%	4.7	4.4	7,249	8,716 1	11,277 1	14,795 4,472	72 39%	4,472	6,804 104	4,472	1,811	2.4	0.0	100%	18%	3.3
*2003 CBECS Detailed Tables, released June 2006, BECS Table B1. Summary Table: Total and Means of Floorspace, Number of Workers, and Hours of Operation for Non-Mail Buildings, 2003	2006, BECS Tat	ble B1. Summa	ry Table:	Total and Me	ans of Roo	rspace, Nun	ber of Work	¥s,andHk	ours of Opera	tion for Non-M	all Buildings	3, 2003							
"ANSI/ASHRAE/IESNA Standard 90.1-2004, Table 9.5.1 Lighting Power Densities	Table 9.5.1 Lig	fitting Power De	ensities Us	Using the Building Area Method	fing Area Mo	pou	;	,											
**Incremental costs for parking garages include ratio for lower power densities and fixture count. Parking garages do not include interactive demand or energy effects.	te ratio for lower	power densitie.	s and fixtu	Je count, P2	arking garag	es do notino	tude interacti	ve demana	lor energy eff	SCF.									
****Incentives based on 2011 UES Program Parming ************************************	anning actors based on	r endineering a	acijourss	92															
				i															
Weichted Average Check	χO	XO XO		ÖK	οK	ŏ	OK	ě	ok o	ok ok	X	0K	OK)OK	Ж)OK	0K	λO	ŏ

Incertive Calculations
ENER GY-EFFICIENT COLD CATHODE FLUORESCENT LIGHTING (CC CFL)

PROCRAM DATA			RATE DATA					OPERATING DATA	ATA				10	OTHER FACTORS	JRS			
Moseum He (ur.).	ď	•	otto.				, ₁ C	טר מט אמיני	Ė			ğ] <u>-</u>	ine Loss Earthy- Demand	Tr. Demand		9 5%	
Medaule Life (MS):	0 1		Kale:			-		OIFPR Op. HOUS.				0 0	5 :	E Loss Fact		-	0 0	
ProgramLife (yrs):	Ω.		\$/ KW:			0.00	<u></u>	Off-PK Op. Hours:	::			5,587	<u> </u>	Line Loss Factor - Energy.	or- energy:		9.5%	
Demand AC (\$/kW):	57.31		\$/kwh, on-Peak:	eak:		0.11	_	Total Hours				4,380	ొ	Capacity Reserve Factor:	ve Factor:		8	
Summer On-pk Energy AC (\$/ kWh	0.07		\$/kWh, Off-Peak:	eak:		0.11	S	Summer Ratio:				20%	₹	Application			RET	
Summer Off-pk Energy AC (S/kWh	0.05	•						Winter Ratio.				20%	ఠ	Cost Basis:			E	
Winter On-pk Energy AC (\$/ kWh);	90:0						J	Coincidence Factor	actor:			0.02						
winter Off pk Energy AC (\$/ kWh):	90.0																	
Program/Admin Costs (\$/ unit):	A																	
Discount Rate:	9.05%																	
Societal Discount Rate:	4.00%																	
NTG Ratio	100%																	
DE	DEMAND/ENERGY SAVINGS	RGY SAVIN	ICS				INC	INCENTIVE CALCULATIONS	ULATIONS				CUSTOMER	CUSTOMER COST/SAVINGS	INGS	WGT.	%Incert	Societal
		S N													-			
	Cold	cald coincident coincident	Coincident	Orpk	Off-DK	RP	Social			A								
Inc.	cathode	cathode Demand	Demand	Energy	Energy	≥	≥	R ecommended		Program			ı	ğ				
Fixture Fixture	Fixture	Savings	Savings	Savings	Savings	Benefit	Benefti	Incentive**	*a)	cast	ΔM	costs	Savings v	wo/inc.	winc.	Weighting		
Type Watts	watts	(KW)	(KW)	(KWh)	(KWh)	(Ş)	(S)	(\$)	%bv	(S)	(\$)	(S)	(\$)	(yrs)	(AFS)	Factor*	6%)	BC Ratio
	•				i		;			Ç		ć	,	,		ò	ò	Ċ
SCREW-IN Z5	'n	0.022	000	2	77	/7	51	12.46	46%	7.	<u>at</u>	2	= :	- :	0.0	° 2	88	6.7
30	S	0.025	0000	22	8	34	36	1.9 2.1	%92	7	8	7	12	6.0	0.0	%	100%	3.2
40		0.035	0.001	35	118	43	S	11.01	%97	7	32	7	17	9.0	0.0	30%	1 00 %	4.5
45	8	0.037	0.00	37	125	45	23	13.15	29%	13	32	13	18	0.7	0.0	5%	100%	4.0
920	80	0.042	0.00	42	142	잗	8	13.15	%97	13	38	13	71	9.0	0.0	5%	100%	4.6
54	8	0.046	0.00	46	156	26	99	13.15	23%	13	43	13	23	9.0	0:0	5%	100%	2.0
9	80	0.052	0.00	25	176	25	74	13.15	21%	13	22	13	56	0.5	0.0	40%	,001 %	5.7
65	∞	0.057	0.00	22	193	2	8	13.15	19%	13	22	13	88	0.5	0.0	%	100%	6.2
75	∞	0.067	0.00	29	227	83	96	13.15	16%	13	69	13	33	0.4	0:0	10%	100%	7.3
Weighted Average		0.044	0.001	4	150	24	83	12.40	25%	12	42	12	22	0.61	8	100%	100%	5.1
Collection of property of section of the section of	receive society	tion and	9	i independ	de de la companya de	, 000												
Weighting Facility to the Billion is assuribled; wicasure Life based of weighting.	or is assum.	AICH I WIEdst. 10.	THE FIRE DRIVE		assumbudi c	e assumption of 2000 months	ń											
		,																
Weighted Average Check		OK	yo.	OK	OK	οK	OK	OK	OK	OK	ò	OK	OK	ЭĶ	OK	OK	OK	OK

incertive Calculations
Energy-Efficient Fluorescert Pildures - Retroff Applications
Replace T12 Systems and Magnetic Ballasts with T8 systems and Electronic Ballasts

Program Life (vis):	v. O.00 Wh.OnPeak: 0.11 Wh.OnFeak: 0.11 Wh. Check: 0.11 doi: 1.11 doi: 1.11	Q#	On-PK OD HOUS: OffeK OD HOUS: TOBIO DA HOUS: SUMMER ABO: CONCIGENCE FACID: HVAC INTERACTOR	S: S	(Dentand: (Energy): (ENERTIVE CALCULATIONS)				al de Signatura de	Live Loss Factor - Demand Live Loss Factor - Ervery, Capacity, Reserve Factor. Cost Basis:	Broth Broth WGT.	9.594 9.594 094 R ET Full installed	Societal
3) OnPeak:), Off-Peak: In the controller on and Demand Ene	Q#0	Offek Op Hous: Total Op Hous: Summer Ratio. White read to White read to HVAC Interaction HVAC Interaction	S: ctor: n Factur (Energy nn Factur (Energy	A: F: TVE CALCULATIO				Ap GA CO	ne Loss Factor - Ere prochy Reserve Fact portation screams:		9.5% 0% RET FUB Installed %Incert	Societal
74.78 74.77 74.78 76.78) Off-Peak:) Off-Peak: In the condent on and Demand Ene	o p	Total Ob. Hours: Summer Rabo: Winter Rabo: Concidence Fact HVAC: interaction HVAC: interaction	ctor: nn Factor (Energy nn Factor (Energy nn Centry (Energy)	A: F: TIVE CALCULATIO	, <u>8</u> 8			Ap Gal	spacify Reserve Fact prication of Basis:		RET FULL INSTALLED	Societal
### 65/kWhi: 0.09 ###################################	Cident On	0 ¥7	Surmer Ratio: Writer Ratio: Concidence Fac HVAC Interactio HVAC INTERACTION	ctor: n Factor (Genra n Factor (Energe	rd: TIVE CALCULATIO				App Co	pricaton	WGT.	RET Full installed	Societal
Oct	ļ ļ		Wirter Ratio: Coincidence Fac HVAC Interactio	ctor: In Factur (Energy In Certification (Energy) Social	A:				Samon	5f Bas 6:	WGT.	Full installed	Societal
100 100	ļ ļ		Coincidence Fac	otor: In Factor (Dena In Factor (Energy In Carlot (Energy In Carlo	A: h: TIVE CALCULATIO				CISTOMED		WGT.	%ілсен	Societal
1007 1007	ļļ		HVAC Interaction HVAC Interaction IR P	n Factor (Dena n Factor (Energy INCEN	d: h: TIVE CALCULATIO	& }			CICALOMED		WGT.	%Incent	Societal
Imadmin Cost (5) kWh):	ļ ļ		HVAC Interaction	IN FACETY (E-NBTG)	#: TIVE CALCULATIO	& !			CICALOMED		WGT.	%Incent	Societal
DEGOLATE Rate		o Ap#o	R 9		TIVE CALCULATIO				CISTOMED		WGT.	%incent	Societal
1009 1009		o Ap#o	<u>8</u>		TIVE CALCULATIO	1 1			CITOMED		WGT.	%incent	Societal
1009	,	Ď. ޱo	RP	1 1	TIVE CALCULATIO				CISTOMED		WGT.	%ircert	Societal
DEMAND/ENERGY SAVINGS # Of Base EE EE Length in Figure Type Wats Wats Wats Wats All EB mitter 2 2 Hern power 48 17 35	,	Off D	RP		TIVE CALCULATIO	1 1			CISTOMED		WGT.	%incent	Societal
DEMAND/ENERGY SAVINGS # of Base EE EE Length (M Figure 1 Ype Walts Walts Walts and TRR 2 2 Herb Power 48 17 35		Office	RP		TIVE CALCULATIO			Ų	CHARDO	1 1 1 1 1 1 1 1 1 1 1 1	WGT.	%Incent	Societal
Je for Balbst Fixt Lamp Fixt Length (10 Fixture Type Watts Watts Watts Fixture Type Watts Watts Fixture Type		O#D	ВР	Social		A			COOL CITIES &	CUSTOMER COST/SAVINGS			
# 1 OF # 1 PACE Base EE EE Demand **End of Emark Emark Emark Emark Emark **Length of Entare Type Walts Walts Walts Emark **Entare Type Walts Emark Emark Emark **Entare Emark Emark Emark Emark **Entare Emark Emark Emark **Entare Emark Emark Emark Emark Emark Emark **Entare Emark Emark Emark Emark Emark Emark **Entare Emark Emark Emark Emark Emark Emark Emark **Entare Emark **Entare Emark Emark Emark Emark Emark Emark Emark Emark **Entare Emark Emar	Denand					-							
Length in Fixture Type Watts Watts Watts (KW) Length in Fixture Type Watts Watts Watts (KW) Ant TR 2 2 Hitch Power 48 17 35 0006		Energy	δ	2	Recommended	riogam		<u>n</u>	cost	Payback			
Length (in Fixture Type Watts Watts Watts (KW)	avings savings savings	Savings	Benefit	Benefit	incentive***	Cost	NPV	COST	Savings	worlnc. winc.	. weighting		
nn TR: 2 2 Hinti Druver 48 17 35 0026	(KW)		(S)	(\$)	(S) %PV	(\$)	(\$)	S	(\$)	(yrs) (yrs)	Factor	6%)	BC Ratio
2 2 High Privar 48 17 35 0,026													
20 21 20 1611	1026 0.025 18	8	42	58	46.75 111%	47	7	46.75	4	10.8 0.0	0.03%	400%	1.2
4 1 Standard 48 32 34 0.030		22	48		37.78 78%	82	8	37.78	'n	7.6 0.0	1.72%	400%	1.8
r 48 32 39 0.019	0.018	14	26	41	38.81 129%	33	м	38.81	м			400%	1.1
32 63 0.042	0.040	۶۶	88		41.27 61%	41	23	41.27	7		27.27%	400%	2.3
r 84 32 79 0.010	7 0100 01010	80	91	23	42.89 260%	43	8	42.89	2	25.4 0.0	6.42%	400,	0.5
3 32 84 0.039	0.037	æ	29		62.44 98%	62	23	62.44	7		63.62%	400,	1.4
32 124 0.040	0.039 29	34	99	94	47.91 73%	48	54	47.91	7	7.1 0.0	0.73%	100%	1.9
Weighted Average 96 32 77 0 0	0 0 27	53	15	88	54.83 98%	SS	S	58.83	9	9.6	100%	100%	1.5
							<u>.</u>						

^{*}Measure life based on DEER 2008 EUL data **Incremental cost is total cost buy new 112 Maures/lamps **Incremental cost is total cost for a new 18 under the assumption that customers do not buy new 112 Maures/lamps **Incremental cost is total cost for a new 18 nogam Planning.

Incertive Calculations	Chora (C. Carlort Cl. venor nov tiche von

						R eplace Star	ndard T8 Sy	sterns with PI	Replace Standard T8 Systems with Premium T8 Systems	ems													
PROGRAM DATA						RATE DATA				OPI	OPERATING DATA	ΤA							Ē	OTHER FACTORS	RS		_
Measure Life (vs)*				15		Rate:				5	OnPk Op. Hours:				1,320				Line	LOSS Facto	Line Loss Factor - Denand	6	%
ProgramLife (vs):				ın		\$/kw:		000		\$0	Off-Pk Op Hours:				1,405				E.	Line Loss Factor - Energy,	r-Energy.	9.5%	%
Demand AC (CVA).				87.07		Strwh Onbeak		7		: E	Total On House				2725				Can	Capacity Reserve Factor	ve Factor:		%
Committee of the commit	1			2 8		Cloth Of Dal					Comment of the commen				7001				T.	Armication		1	Ь.
SUTTIEF OF EX EMBY AL 15/ KWIN.	WIV.			800	_	S/ KWII UIFFEAK		-		n _c	I SERVICE				3								
Summer Official Energy AC (S/kWh):	Wh			0.07						3	Winter Ratio:				20%				8	COST Basis.		Full Installed	힑
Winter On plk Energy AC (S/ kWh):	VI).			0.08						Ç	Coincidence Factor.	Ħ			0.93								
Winter Official Energy AC (S/ KWh):	KP.			0.07						ž	HVAC Interaction Factor (Denand).	Factor (Der	nand):		107								
ProgramAdmin Costs (\$/ kwh. saved)	saved			ĄN						Ì	HVAC Interaction Factor (Energy)	Factor (Ene	:00%		1.11								
DiscountRate				9.02%						•													
Social Discount Rate				4.00%																			
NTG Ratio				100%																			
				DEMAND/ENERGY SAVINGS	ENERGY S/	VINGS								INCENTIVE	INCENTIVE CALCULATIONS	INS		CUSTO	CUSTOMER COST/SAVINGS	/SAVINGS	WCT	. %incent	t Societa
												_											
								8	Caincident Cai	coincident o	Onde Office		Social	_		Z							
		Ď	Base	Base	Base	끮	出		Demand De	Demand Er		Energy PV	₹		Recommended	Program			Į	된	$\overline{}$		
Measure		Lamps in	ramp	ramp	똪	Lamp	Lamp	F	Savings Sa	Savings 5a	Savings Sav	Savings Benefit	# Benefit		Incertive***	cost	₹	cost** Sav	Savings wo	wo/inc. w/	WInc. Weighting	<u>e</u>	
1,00	Length	Fixture	Type	watts	watts	Type	watts	watts		(KW)	KWH (KV	(KWP)	(S)	S	%bv	(\$)	(S)	(S)	(S)	(NS)	(yrs) Factor	۳ (%	BC Ratio
								_				L										_	
StdT8to	4-foot	4	F32T8	32	109.5	F32T8 / ES	72	8	0.052 0	0.048			115	62	75%	9		61.93	7				8
PremT8		M	F32T8	32	83.5	F32T8 / ES	22	8		0.038	29 31			62	82%	62	28				0.0 33%		_
		2	F32T8	32	292	F32T8 / ES	23		0.029	0.027	21 2	47	65	23	109%	25							
		1	F32T8	32	S	F32T8/ ES	77	23	0.014 C	0.013	10 11			47	302%	47	-15		2 19		+	+	0.7
Weighted Average				32	83		22	25	0.041	0.038	29 31	9		29	93%	28	32	58.52	2	-	Ì	+	1.5
PerLanp	4-foot	4	F32T8	32	27.4	F32T8 / ES	22		0.013	0.012		_		15	75%	15			2 7	7.2 0.			1.8
		12	F32T8	32	27.8	F32T8 / ES	22	2	0.014	0.013	10 10	7	30	73	92%	7	60		2 9		0.0 33%	-	
		7	F32T8	32		F32T8 / ES	23		0.015	0.014				56	109%	56		25.79	7			_	
		-	F32T8	32	30.0	F32T8 / ES	22		0.014	0.013	10 11			47	202%	47	-15 4	46.89	2 15	1	\dashv	4	6
Weighted Average				32	28		22	71	0.014	0.013	10 10	1 22	30	21	93%	24	9	20.65	2 8	9.0	0.0	400%	1.5
*Messure life based on DEER 2008 EUL data. **Incremental costs to tala cost for a new 18 under the assumption that customes do not buy new 112 final new 112	2008 EUL data. :fora new T8 ur :S ProgramPlan	rder the assum raing.	ption that custom	ers do not buy	new⊺12 fi	dures/lamps																	
Stree for isolation data avoiable for UNISE tention, adopted the MAPS intervental costs to UNISE avoided costs and Sanzia it 8 operating data. Definition of a Prentum Ra as a 28W or 25W of lamp is based on the Consordium france of Petrician Costs and Costs and Sanzia it 8 operating data.	able for UNSE to 28W or 25W 4	emitory, adapte 'tamp is based	d this MAS from A	PS Increments Infor Energy E	ficiency's o	NSE avoided cos	ced Wattag	Mand T8 opper	iling data.	1													
BASECION EE FIXILIE WALLS, 4-1000 PIEMLIMI ES LISE AN AVERGGE OF 78% OF THE WALLEGE OF 4-1000 KIEGLIANT I BS.	ooce/remumis	s use an avera	ge or /8% or ure	Natage of 4-r	жкеды		aues aun	s rue for s-r.	Assumed vialure same is nue for s-rootand 2-root premumilies.	remum es.													

Schools - Existing Motors

Incertive Calculations VSD's Installed on ODP Motors 1800 p.p.m.

						1800 R PM								
PROGRAM DATA			RATE DATA	d.			OPERATING DATA			ОТНЕ	OTHER FACTORS			
Conservation Life (vis)	15		Rate:				On-Pk Op. Hours:		2440	Line	ine Loss Factor-Demand	mand:		9.5%
ProgramLife (vrs):	ıs		S/KW:		0.00		Off-Pk Op. Hours:		2643	Line	Line Loss Factor-Energy.	ergy:		9.5%
Denrand AC (\$/kW):	74.78		S/kWh, On-Peak:	·Peak:	0.11		Summer Ratio.		20%	Capac	Capacity Reserve Factor	actor:		%0:0
Summer On-pk Energy AC (\$/ kWh):	0.09		S/kWh, Off-Peak:	Peak	0.11		Winter Ratio:		20%	Application	ation		RE	RET / NEW
Summer Offick Energy AC (\$/kWh):	0.07						Coincidence Factor:		0.95	CostBasis	3asis:		豆	Full Installed
Winter On-pk Energy AC (\$/kWh):	0.08		SAVINGS FACTOR ASSUMPTIONS	ACTOR AS	UMPTION	S	Load Factor:		0.68					
Winter Off-pk Energy AC (\$/kWh):	0.07		VFD Efficier	:A	95%		Demand Savings Factor	ä	%0:0					
Program Admin Costs (\$/ unit):	Ą		Peak FlowRatio (Den	Ratio (Derr	0.95		Energy Savings Factor	8	76.9%					
IRP Discount Rate:	9.02%		Avg Flow R	Flow Ratio (Energ	0.55									
Social Discount Rate	4.00%													
NTG Ratio	100%													
					N.	INCENTIVE CALCULATIONS	NS		CUSTON	CUSTOMER COST/SAVINGS	-	WGT.	%Inc.	Societal
	Non Coin Coin													
			Off-pk	RP	Social		2	ncr.	Cost					
	Savings Savings	gs Savings	Savings	₹	≧	Recommended	Cost	cost	Savings	Payback		_		
Motor Motor			PerHP	Benefit	Benefit	Incentive (Per HP)*	Per HP NPV	PerHP	PerHP	wo/Inc. w/	winc. We	Weighting		

							INC	ENTIVE CA	INCENTIVE CALCULATIONS	S			CUSTOM	CUSTOMER COST/SAVINGS	INGS	WCT.	%Inc.	Societal
		Non Coin	Coin															
		Demand	Demand		O#DK	RP	Social			⋧			Cost					
		Savings	Savings		Savings	⋧	≥	Recommended		Cost			Savings	Payback	X			
Motor	or Motor	PerHP	PerHP	PerHP	PerHP	Benefit	Benefit	Incentive (Per HP)*	ı	PerHP	NP V	PerHP	PerHP	wo/Inc.	w Inc.	Weighting		
HP		(KW)	(KW)	- 1	(KWh)	(\$)	(S)	(S)	% b /	(<u>S</u>)	(S)		(\$)	(MS)	(yrs)	Factor	%	BC Ratio
				l						į	-					, de	ì	
	1 80.4%	00	0.0	1,188	1,287	1,676	2,744	1,051	62.71%	1,051	625	1,051	281	3.7	0.0	11.7%	35	5.6
-	5 84.8%	0.00	000	1,126	1,220	1,588	2,601	715	45.02%	715	873	715	266	2.7	0.0	11.7%	,00t %001	3.6
	2 85.7%	0.00	0.00	1,115	1,207	1,572	2,575	545	34.69%	545	1,027	₹	263	2.1	0:0	11.7%	100%	4.7
	3 85.7%	000	0.00	1,115	1,207	1,572	2,575	374	23.82%	374	1,198	374	263	1.4	0.0	11.7%	100%	6.9
	5 85.7%	000	0.0	1,115	1,207	1,572	2,575	235	14.95%	235	1,337	235	263	6.0	0.0	11.7%	100%	11.0
- 2	7.5 85.7%	000	0.00	1,115	1,207	1,572	2,575	2 6	10.41%	<u>2</u>	1,409	1 8	263	9.0	0.0	%9.9	10% %	15.7
_	_	0:00	0.0	1,115	1,207	1,572	2,575	127	8.10%	127	1,445	127	263	0.5	0.0	%9.9	10%	20.2
		000	0.0	1,115	1,207	1,572	2,575	8	5.74%	8	1,482	8	263	0.3	0.0	%9:9	100%	28.6
- 2		00:0	0.00	1,115	1,207	1,572	2,575	۲	4.52%	۲	1,501	7	263	0.3	0.0	%9.9	10%	36.2
2	25 85.7%	0.00	0.0	1,115	1,207	1,572	2,575	83	3.77%	23	1,513	23	263	0.2	0.0	2.3%	, % 0,	43.4
33		000	0.0	1,115	1,207	1,572	2,575	2	3.26%	잗	1,521	22	263	0.2	0.0	2.3%	100%	50.2
4		000	0.00	1,115	1,207	1,572	2,575	4	2.60%	41	1,531	4	263	0.2	0.0	2.3%	, 00,	6.29
n.		000	0.00	1,115	1,207	1,572	2,575	32	2.20%	32	1,538	32	263	0.1	0.0	2.3%	, % 0,	74.6
9		000	0.00	1,115	1,207	1,572	2,575	33	1.92%	30	1,542	23	263	0.1	0.0	1.0%	100%	85.5
_		000	0.00	1,115	1,207	1,572	2,575	5 6	1.63%	56	1,547	5 6	263	0.1	0.0	1.0%	100%	100.7
75		000	0.00	1,115	1,207	1,572	2,575	73	1.33%	7	1,551	7	263	0.1	0.0	1.0%	,00t	123.6
12		000	0.00	1,115	1,207	1,572	2,575	92	1.14%	8	1,554	8	263	1.0	0.0	%9.0	, % 0, 1,0%	144.0
- 15		000	0.00	1,115	1,207	1,572	2,575	9	1.91%	16	1,556	9	263	0.1	0.0	%9.0	,00c ,00c	162.8
20		0.00	0.00	1,115	1,207	1,572	2,575	13	0.83%	13	1,559	5	263	0.0	0.0	%9.0	100%	197.2
300	_	0.00	0.00	1,115	1,207	1,572	2,575	6	0.64%	9	1,562	9	263	0.0	0.0	%2.0	100%	254.8
501-1000	0 92.3%	0.00	0.00	1,034	1,121	1,459	2,390	9	%69.0	9	1,449	9	244	0.0	0.0	0.2%	100%	236.5
1000+		0.00	0.00	1,034	1,121	1,459	2,390	9	%69.0	9	1,449	5	244	0.0	0:0	0.1%	100%	236.5
											-							1
Weighted Average		0	0	1,121	1,214	1,581	2,589	377	0	377	1,204	377	265	-	80	100%	100%	6.9
Based on 2011 UES Program Planning	gramPlannir	D j																

Incertive Calcutations
Occupancy Sersor Vending Machine and Reach in Cooler Controls

Schools - New Refrigerators

																	-			
PROGRAM DATA					RATE DATA	4				10	OPERATING DATA	ATA					OTHER FACTORS	ACTORS		
Measure Life (yrs):			12		Rate:					ō	On-PK Op. Hours Fraction	is Fraction:		24%			LineLoss	ine Loss Factor-Demand		9.5%
ProgramLife (yrs):			'n		S/KW:			0.00		ŏ	Off-PK Op. Hours Fraction.	IIS Fraction.		392			LineLoss	Line Loss Factor-Energy.		9.5%
Derrand AC (\$/kW):			68.44		S/kWh, On-Peak:	Peak		0.11		<u>.s</u>	Summer Ratio:			20%			Capacity	Capacity Reserve Factor:		%
Summer On-pk Energy AC (\$/ kWh):			0.08		5/ KWh, Off-Peak	Peak		0.11		3	Winter Ratio:			20%			Application	-		RET, NEW
Summer Off-pix Energy AC (\$/ kW/h):			90.0							8	Coincidence Factor.	octor:		100%			CostBasis			Installed
Winter On-pk Energy AC (\$/kWh):			0.08							<u>ٽ</u>	Demand Load Factor*:	Factor*:		0.60						
Winter Offick Energy AC (\$/ kWh):			0.07																	
Program Admin Costs (S/ unit):			Ϋ́																	
Discount Rate:			9.02%																	
Social Discount Rate:			4.00%																	
NTG Ratio:			100%																	
																	!			
	DEM/	AND/ENEF	DEMAND/ENERGY SAVINGS	NGS						INCEN	INCENTIVE CALCULATIONS	JLATIONS			CUSTOME	CUSTOMER COST/SAVINGS	VINGS	WCT.	%Incent	Societal
					Non-Coin. Demand	Coin. Demand	On to	O#C	IRPPV SocialPV	ocial PV		_	≥	II IIC	r. cost	يو				
		Rase	Base Denand	Fnerov	Savinos	Savinos	Savinos	Savinos	Renefit	Benefit	Recommended		Cost	COST	st Savinos		Payback			
Measure		Amual	Armual Savinos	Savinos	Perunit	PerUnit	Perunit	Perunit	Perunit	Perturit in	Perunit Perunit Incertive (Perunit)***	Unit Per	يي	NPV Per Unit		3	w Inc.	Weighting		_
Description	Type	kwh	kwh Fraction*	Fraction*	(KW)	(KW)	(KWh	KWh	(S)	& 	6 (S)		(\$)	(\$) (\$)	(\$)	(yrs)	(Ars)	Factor**	6%	BC Ratio
		8	, ,	ý	2	2	202	8	5	S	,	, vec	004	700	327	7	9	7022	400%	97
Descende Core Controls	VendMirer	8 2	2020	30%	5 6	5 5	202	5 2	707	325 1 325				745 199	•		8 8	32%	300L	62
	SrackWiser	8, 8	23%	46%	0.03	0.03	g &	243	¥ 8	247				_			00	33%	4001	2.4
							1										Ċ	Ì	ì	
Weighted Average		2,733	50%	41%	0.10	0.10	255	789	611	803	167	35% 1	167 4	444 1 167	7 118	3.1.8	0.0	18%	100%	8.4
Personal conscondence with 115.4 technologies verifiable through "Evaluation of the Lite/and Program" Ecos 2004: 1706/1 calmac, only bubications/Final Report 063004.pdf	nologies/verifia	ble through	ı "Evaluati	onoffheLi	teVend Pro	orant Ecos	2004: Pttp	//calmac.c	ro/ bublicati	ons/Final R	eport 06300	74.DC								
**Demand Load Factor and Weighting Factor based on engineering assumptions	ctor based on e	ngineering	assumptic	يغ					1	1	1									
***Incertives based on UES 2011 ProgramPlanning	nPla rring.																			
Weighted Average Check			š	ă	š	ð	ð	ă	ð	ð	ĕ	ă	ž	Ж Ж	ð	ă	ĕ) OK	OK	ΟĶ

Incertive Calculations Advanced Power Strips

Schools - New Plug Loads

STAGE STAGE					ľ	ATE DATA					OPER ATING DATA	ATAC					OTHER FACTORS	Sa	
PKUUKAM DALA					<u> </u>	ייייייייייייייייייייייייייייייייייייייי				1						T			
Measure Life (yrs)*:				12	ī¥.	ate				_	On-Pk Op. Hours	Ë				38%	Line Loss Factor - Denand	r-Demand	9.5%
ProgramLife (vis):				.c	<u>ss</u>	/ kw:		000		U	Off-PK Op. Hours:	Ë				9 2%	Line Loss Factor - Energy,	r-Energy:	9.5%
Demand AC (\$/ kW):				68.44	<u> </u>	S/kWh, On-Peak:	نخ	0.11		s	SummerRation					20%	Capacity Reserve Factor	/e Factor:	%0
Summer Open't Emersy AC (S/KWh)	VC (S/ k/Whs			0.08	<u> </u>	VKWh Of Peak	نيد	0.11		<u> </u>	WinterRatio					20%	Application		RET
1600					נ						Completion Contra					5	Cortionis		End Inchalled
Summer Off-pix Energy AC (5/ KW h):	AC (S/ KWP):			on:n						-11	יחורות	arm.				3]	Corpaso.		L'all blanch
WinterOn-pk Energy AC (\$/ kWh):	CS/kwh):			0.08															
Winter Official Energy AC (\$/ kwh):	CS/kwh:			0.07															
Program Admin Costs (\$/ kWh, saved	/kwh, saved			Ϋ́															
Discount Rate:				9.02%															
Social Discount Rate				4.00%															
NTG Ratio				100%															
· ·																			
	^	EMAND/E	DEMAND/ENERGY SAVINGS	S					INCENTIVE	INCENTIVE CALCULATIONS	NS			CUSTOM	CUSTOMER COST/SAVINGS	SAVINGS	WGT.	%Incent	Societal
		Z	Non-Coincident	Coincident	Ondk	Off-pk	IRP	Social			Program	₹							
		jo #	Demand	Demand	Energy	Energy	≥	Z	Recommended	nded	Admin	Total	<u>=</u>	Incr. Cost	et et	Payback	- 1		
Measure		Smart	Savings	Savings	Savings	Savings	Benefit	Benefit	incentive**	**6	COSES	Cost	_	Cost Savings	ings wo/Inc.	Inc. winc.	: Weighting		
Type	Size	Strips	(KW)	(KW)	(KWh)	(KWh	(S)	(Ç)	S	% PV	(Ş)	(Ş)	(\$)	(S) (S)	(Ars)	(yrs)	Factor	6%)	BC Ratio
		,			į	į	ź	į	8	XOF P	8	5	90	8	77 07	60	70007	70007	90
Occupanc)	8-current	-	0.044	0.044	CO :	2 3	- :	<u>.</u>	8 8) is	8 8	3 8	+				+	9	3
	Weighted Average	erage	0.044	0.004	65	105	111	154	3	%//	S .	<u>3</u>	, 9,	3 3	19 4./	0.0	NO.	%ADI	80
Load	6-outlet	-	0.023	0.023	36	29	8	88	æ	46%	30	8		71		2.8 0.0		100%	1.4
Sensor	7-outlet	-	0.023	0.023	37	59	29	88	32	47%	32	29		11			% 8	100%	1.4
	8-cuttet	_	0.026	0.026	42	99	75	66	32	45%	32	8	33	32 1		2.5 0.0		400%	1.5
	10-cuttet	-	0.034	0.034	22	93	101	133	25	34%	34	89			17 2.	2.0 0.0	31%	100%	2.0
	Weighted Average	erage	0.027	0.027	45	73	79	105	32	41%	32	29	40	32 1	13 2.	2.5 0.0	100%	100%	1.6
Timer Plua	S-caffet	-	0.047	0.047	25	132	142	187	19	13%	19	38	149	2 2	24 0.	0.8 0.0	100%	100%	4.9
	Weighted Average	9000	0.047	0.047	∞	132	142	187	19	13%	19	82	149	19 2		0.8 0.0		100%	4.9
	AL DON BOAR	3	Ì	Š	5								1				-		

*Measure life based on information in Final Report Electronics and Energy Efficiency. A Plug Load Characterization's budy. SCE0288. Prepared for Southern California Edison by Research Into Action. January 29, 2010. **Incentives based on 2011 UES Program Planning. **
**Weighting Factor based on engineering assumptions.